AD-A055 321 COAST GUARD WASHINGTON D C OCEANOGRAPHIC UNIT F/G 13/10

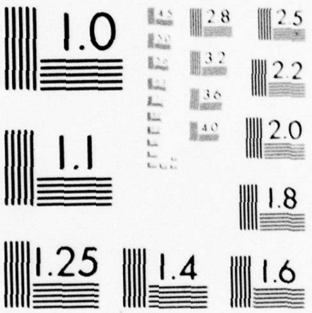
EXPERIMENTS IN SMALL CRAFT LEEWAY.(U)

1978 C W MORGAN, S E BROWN, R C MURRELL

UNCLASSIFIED CGOV-TR-77-2 NL

1 OF 2

AD
A055 321


1.0
2.8
2.5
3.2
2.2
3.6
4.0
2.0
1.1
1.8
1.25
1.4
1.6

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

FOR FURTHER TRAN

DEPARTMENT OF TRANSPORTATION

COAST GUARD

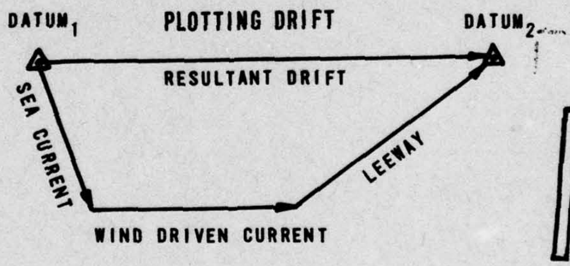
AD A055321

(5)

EXPERIMENTS IN SMALL CRAFT LEEWAY

THIS DOCUMENT IS BEST QUALITY PRACTICABLE.
THE COPY FURNISHED TO DDC CONTAINED A
SIGNIFICANT NUMBER OF PAGES WHICH DO NOT
REPRODUCE LEGIBLY.

DISTRIBUTION STATEMENT A
Approved for public release;
Distribution Unlimited


DATUM$_1$
PLOTTING DRIFT
DATUM$_2$
RESULTANT DRIFT
SEA CURRENT
LEEWAY
WIND DRIVEN CURRENT

DDC
RECEIVED
JUN 20 1978
E

AD NO.
DDC FILE COPY

U.S. Coast Guard Oceanographic Unit
Washington, D. C.

Oceanographic Unit Technical Report 77-2

78 06 15 001

DISCLAIMER NOTICE

THIS DOCUMENT IS BEST QUALITY PRACTICABLE. THE COPY FURNISHED TO DDC CONTAINED A SIGNIFICANT NUMBER OF PAGES WHICH DO NOT REPRODUCE LEGIBLY.

Technical Report Documentation Page

1. Report No. CGOU TECH RPT 77-2	2. Government Accession No.	3. Recipient's Catalog No.
4. Title and Subtitle ⑥ Experiments in Small Craft Leeway. Oceanographic Unit Technical Report 77-2		5. Report Date ⑪ 1978 6. Performing Organization Code
7. Author(s) ⑩ Charles W. Morgan, Savage E. Brown, Robert C. Murrell		8. Performing Organization Report No. CGOU TECH RPT 77-2
9. Performing Organization Name and Address USCG Oceanographic Unit Bldg. 159 E, Navy Yard Annex Washington, D.C. 20590		10. Work Unit No. (TRAIS) 11. Contract or Grant No.
12. Sponsoring Agency Name and Address U.S. Coast Guard Headquarters (G-000-1/74) Washington, D.C. 20590		13. Type of Report and Period Covered ⑨ Oceanographic rept. 1967-1971, 14. Sponsoring Agency Code

15. Supplementary Notes

⑭ CGOU-TR-77-2 ⑫ 96p.

16. Abstract

This report describes a series of experiments by the Coast Guard Oceanographic Unit in the study of small craft leeway. The report tabulates the data collected during the experiments and reports on a preliminary analysis of the relationship between small craft leeway speed and wind speed. This preliminary analysis indicates that leeway of boats less than 30 feet in length is about 6% of the wind speed at 20 to 30 knots wind speed.

DDC
RECEIVED
JUN 20 1978
E

17. Key Words Currents, drift, small boats less than 30 ft.		18. Distribution Statement Release unlimited	
19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of Pages	22. Price

Form DOT F 1700.7 (8-72) REPRODUCTION OF THIS FORM IS AUTHORIZED

086 470

EXPERIMENTS IN SMALL CRAFT LEEWAY

By

CHARLES W. MORGAN
SAVAGE E. BROWN
ROBERT C. MURRELL

U.S. COAST GUARD OCEANOGRAPHIC UNIT
BUILDING 159-E
NAVY YARD ANNEX
WASHINGTON, D.C. 20590

TELEPHONE: (202) 426-4634

U.S. COAST GUARD OCEANOGRAPHIC UNIT TECHNICAL REPORT

The reports in this series are given limited distribution within agencies universities, and institutions engaging in cooperative projects with the U.S. Coast Guard. Therefore, citing of this report should be in accordance with the accepted bibliographic practice of following the reference with the phrase UNPUBLISHED MANUSCRIPT. Reproduction of this report in whole or in part is permitted for any purpose of the U.S. Government.

78 06 15 001

ABSTRACT

This report describes a series of experiments by the Coast Guard Oceanographic Unit in the study of small craft leeway. The report tabulates the data collected during the experiments and reports on a preliminary analysis of the relationship between small craft leeway speed and wind speed. This preliminary analysis indicates that leeway of boats less than 30 feet in length is about 6% of the wind speed at 20 to 30 knots wind speed.

ACCESSION for
NTIS White Section ☒
DDC Buff Section ☐
UNANNOUNCED ☐
JUSTIFICATION..........
BY..........
DISTRIBUTION/AVAILABILITY CODES
Dist. AVAIL. and/or SPECIAL
A 23 EB.

Editor's note: Reference to a product or comment with respect to it in this publication does not indicate, or permit any person to hold out by republication in whole, or in part or otherwise, that the product has been endorsed, authorized, or approved by the Coast Guard.

PRECEDING PAGE BLANK

TABLE OF CONTENTS

Page
Abstract 3
Table of Contents 5
List of Illustrations 5
List of Tables 5
Introduction 7
Data Collection 8
Data Report 9
Preliminary Leeway vs. Wind Speed Graph 9
Appendix 1 - Data Listing I-1
Appendix 2 - FORTRAN Leeway Program II-2

LIST OF ILLUSTRATIONS

Figure 1 - Life raft leeway (adapted from Pingree, 1944) 15
Figure 2 - Surface Current drogue. 16
Figure 3 - Mark-7 inflatable life raft. 17
Figure 4 - Sixteen foot outboard motor boat. 17
Figure 5 - Eighteen foot motor launch. 18
Figure 6 - Thirty foot utility boat. 18
Figure 7 - Sample leeway graph segments. 19
Figure 8 - Sample smoothed leeway graph 19
Figure 9 - Preliminary leeway vs. wind speed graph 20

LIST OF TABLES

1. Leeway rates (adapted from Chapline) 11
2. SARR Cruises. 12-13

PRECEDING PAGE BLANK

EXPERIMENTS IN SMALL CRAFT LEEWAY

INTRODUCTION

Leeway as described in the National Search and Rescue (SAR) Manual, CG-308, is the effect of wind on a drifting craft. There has long been an interest in providing better data for the computation of leeway in search planning. Early efforts in this area include the work of Woods Hole Oceanographic Institute (Pingree, 1944) on life raft leeway during World War II (fig. 1), and experiments conducted by Chapline (1959) in Hawaii (Table 1). The SAR Manual, however, only presents leeway curves for life rafts. More complete curves of leeway were recognized as a development which could improve search planning. Accordingly, in 1967 the Coast Guard Oceanographic Unit undertook to develop and conduct controlled experiments to measure small craft leeway. The persons most directly concerned with planning and carrying out these experiments include J. H. Seabrooke (1967 - 1968), R. C. Clasby (1967 - 1968), A. W. Garcia (1969 - 1970), H. B. Gehring (1970), R. Still (1970 - 1971), R. C. Murrell (1970 - 1971). These experiments began in January 1968 with the first Search and Rescue Research (SARR) cruise. A total of three cruises were made that year. The result of these cruises established guidelines to follow for future cruises. In June 1969 Barbados Oceanographic and Meteorological Experiment (BOMEX) successfully utilized the established methods to obtain many hours of drift data on the 7-man life raft. Valuable data on a variety of drift objects were collected during a series of cruises during the period January 1970 to March 1971. The primary purposes of this report are to present the data collected on these cruises and to present a preliminary analysis, based on the January 1970 to March 1971 data, of the relationship between leeway and wind speed for various small craft. In 1975 this preliminary analysis,

PRECEDING PAGE BLANK

and similar work by the Coast Guard R&D Center, Groton, Conn. (Hufford and Broida, 1974) revealed that the tables found in CG 308 are suspect at moderate to high wind velocities, and confirmed that various types of survival craft have different leeway characteristics.

DATA COLLECTION

Since leeway is the motion of a floating object relative to the water, a particularly simple and effective way to collect leeway data is to track the trajectories of drifting craft relative to a surface current drogue. Additionally, tracking the current drogue relative to a fixed target or navigational fixes of the research vessel will yield information on the surface current. The drifting craft and surface current drogue used in these experiments are illustrated in figures 2 through 6. The drift objects were tracked by recording the ranges and bearings of the drift objects and the current drogue. Range was measured by the ship's radar; bearing was measured visually (preferably) or by radar. Wind speed and direction were measured by the vessel's anemometer or a Bendix Frieze wind speed sensor. Data was collected normally every 20 minutes, although the period sometimes varied from this. Ship's speed and course were recorded from the engineering log and the gyro compass respectively.

Model SST-119XA radar transponders manufactured by Motorola Inc. of Scottsdale, Arizona were installed on the drift objects and current drogue. The power pack consisted of two 12-volt DC lead acid batteries connected in series and attached to the transponder by Marsh and Marine connectors. To provide visual identification in the dark, each object was fitted with a distinctive xenon flashing light, model 300-100R, manufactured by Guest Corp., W. Harford, Conn. The drifting craft were generally weighted with surplus anchor chain to simulate occupancy and missing machinery.

DATA REPORT

General information on all the cruises carried out under this project are shown in Table 2. Appendix 1 contains all the raw data collected on these cruises. These forms are basically self-explanatory, but for complete clarification, the columns are explained at the beginning of Appendix 1. The data are also on file at the Coast Guard Oceanographic Unit in the form of computer cards in a similar format as Appendix 1.

PRELIMINARY LEEWAY VS. WIND SPEED GRAPH

With the objective of preparing a preliminary leeway vs. wind speed graph for use in SAR, the data from five cruises were reduced as described below.

First, leeway speed was computed trigonometrically from the change in displacement of the small craft relative to the surface current drogue during the observation period; then the observed leeway and the observed wind were used to compute leeway speed as a percent of wind speed.

Finally, for each type of small craft, the observations were sorted into intervals centered on 2.5, 7.5, 12.5, 17.5, 22.5, and 27.5 knots, and the average leeway percent was found for each interval. The speed of leeway was then plotted against the wind speed in knots to attain the leeway of each type of small craft within the intervals, producing a series of graph segments (figure 7) which were then smoothed (figure 8) to produce the preliminary graph (figure 9). Figure 9 also shows the results of similar experiments conducted by the Coast Guard Research and Development Center (Hufford and Broida, 1974). The general agreement between the two sets of results, particularly for winds above 18 knots, is fairly good. The apparent relatively high leeway associated with low wind speeds might be an artificiality resulting from leeway speed data scatter remaining above a threshold value even when wind speed becomes quite low.

REFERENCES

Chapline, W. E. (1959) Estimating the Drift of Distressed Small Craft. Coast Guard Alumni Association Bulletin, USCG Academy, New London, CT. p. 39-42.

Hufford, G. L. and S. Broida (1974). Determination of Small Craft Leeway. CGR&DC Technical Report 39/74. U.S. Coast Guard.

Pingree, F. deW., (1944) Forethoughts on Rubber Rafts, Woods Hole Oceanographic Institution. 26 pp.

TABLE 1

LEEWAY RATES (ADAPTED FROM CHAPLINE (1959))

TYPE OF BOAT	LEEWAY AS PERCENT OF WIND
Surfboards	2%
Heavy displacement, deep draft sailing vessels	3%
Moderate displacement, moderate draft sailing vessels and fishing vessels such as trawlers, trollers, sampans, draggers, seiners, tuna boats, halibut boats, etc.	4%
Moderate displacement cruisers	5%
Light displacement cruisers, outboards, planing hull types, skiffs, etc.	6%

TABLE 2 - SARR CRUISES

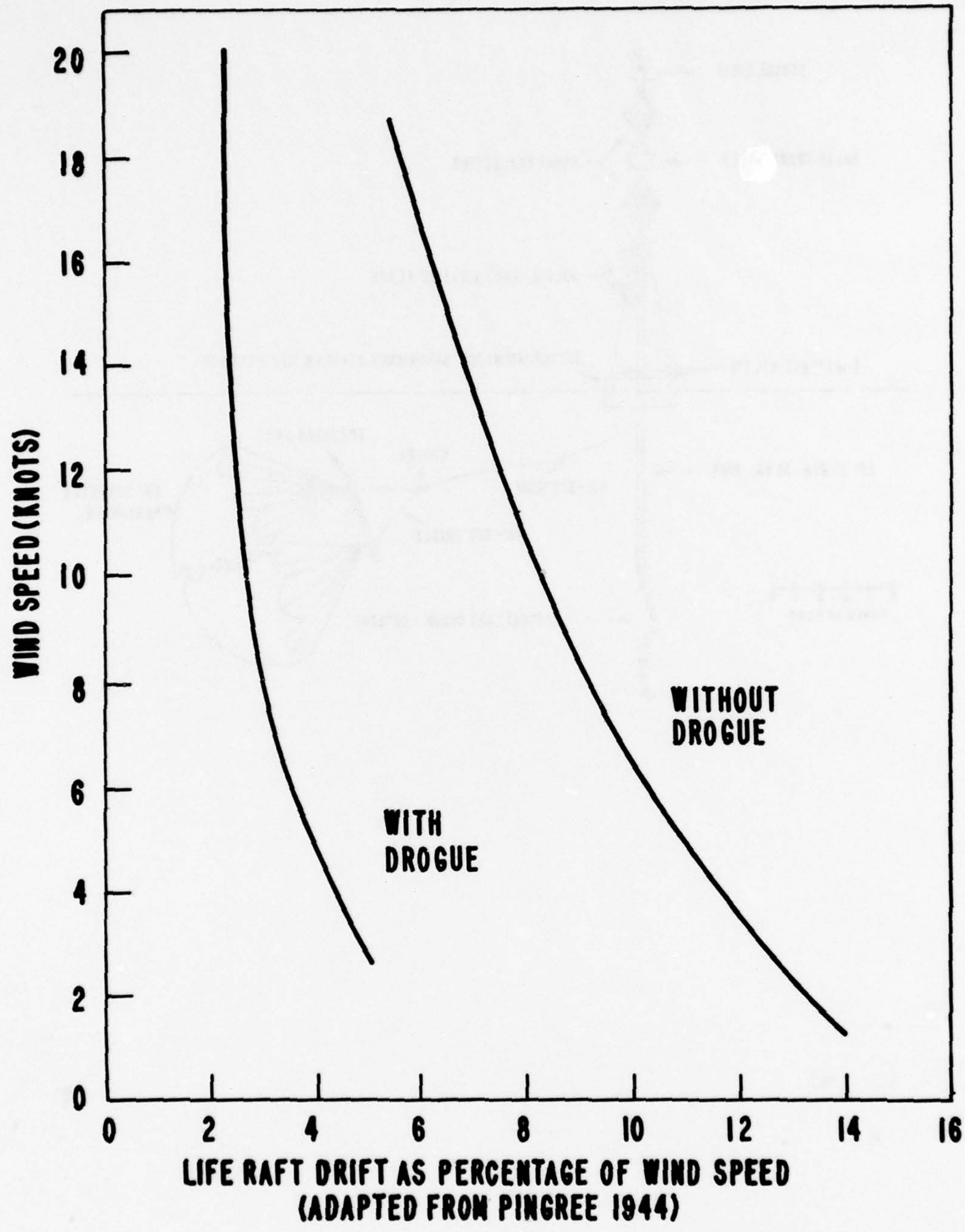
CRUISE	VESSEL	DATES	LOCATION	DRIFT OBJECTS	RESULTS
SAR Research #1	USCGC EVERGREEN	4-12 JAN 1968	Vicinity Nantucket Lightship	X Liferafts intended but heavy weather prevented deployment	38 hr of drogue observations
SAR 9/68 Research #2	USCGC EVERGREEN	19-23 SEPT 1968	Vicinity Nantucket Lightship	X 7 20	∿10 hr tracking drift objects
SAR 10/68 Research #3	USCGC EVERGREEN	21-25 OCT 1968	Cape Cod Bay	X 7 20	∿12 hr tracking drift objects
BOMEXC	USCGC COURAGEOUS	22-29 JUNE 1969	17° 35'N 54° 35'W BOMEX STATION BRAVO	X 7	160 hrs (83 hrs useable)
BOMEXL	USCGC LAUREL	11-15 JULY 1969	15° 23'N 56° 35'W BOMEX STATION BRAVO	X 7	83 hrs
ROSARR 1-70	USCGC ROCKAWAY	15-18 JAN 1970	35N 72W 100 mi east of Cape Hatteras	X 7 16	169 sampling periods of 20 minutes each
ROSARR 5-70	USCGC ROCKAWAY	5-10 MAY 1970	Argus Island Tower 22 mi SSW of Bermuda	X 7 16	206 sampling periods of 20 minutes each
EVSARR 9-70	USCGC EVERGREEN	11-26 SEP 1970	37N 71W 125 mi east of Cape Hatteras	X 7 16 18	1539 sampling periods of 20 minutes each
EVSARR 12-70	USCGC EVERGREEN	4-12 DEC 1970	Argus Island Tower 22 mi SSW of Bermuda	X 7 16 18 30	394 sampling periods of 20 minutes each
EVSARR 2-71	USCGC EVERGREEN	25 FEB - 4 MAR 1971	Argus Island Tower 22 mi SSW of Bermuda	X 7 16 18 30	939 sampling periods of 20 minutes each

Drift Objects:
X - Surface Current drogue
1 - One man life raft
7 - Seven man life raft
16 - Sixteen foot plastic boat hull
18 - Eighteen foot plastic boat hull
20 - Twenty man life raft
30 - Thirty foot wooden boat hull

Table 2 (continued)

The drift craft in all cases, except for the rafts, are presumed not to have been attached to a sea anchor. For the rafts, on 5 of 8 cruises there is a definite statement that the rafts were attached to sea anchors; on the other 3 cruises there is no definite statement. It is presumed that the rafts were attached to sea anchors in all cases.

Figure 1—LIFE RAFT LEEWAY (adapted from Pingree, 1944).



PRECEDING PAGE BLANK

Figure 2—SURFACE CURRENT DROGUE.

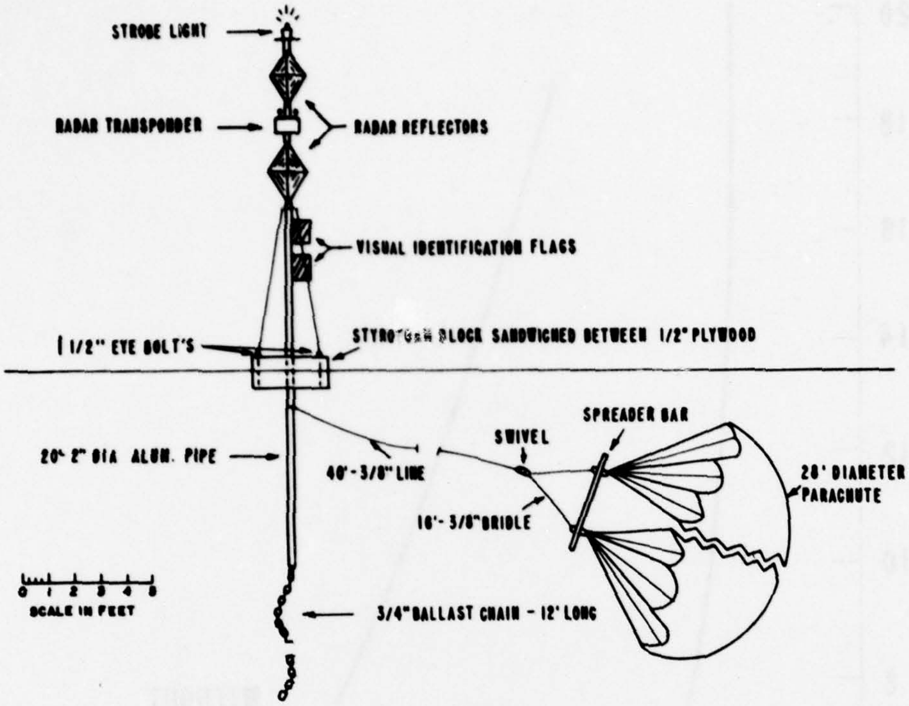

STROBE LIGHT
RADAR TRANSPONDER
RADAR REFLECTORS
VISUAL IDENTIFICATION FLAGS
1 1/2" EYE BOLT'S
STYROFOAM BLOCK SANDWICHED BETWEEN 1/2" PLYWOOD
SPREADER BAR
SWIVEL
20'- 2" DIA ALUM. PIPE
40'- 3/8" LINE
28' DIAMETER PARACHUTE
10'- 3/8" BRIDLE
0 1 2 3 4 5
SCALE IN FEET
3/4" BALLAST CHAIN - 12' LONG

Figure 3—MARK–7 INFLATABLE LIFE RAFT.

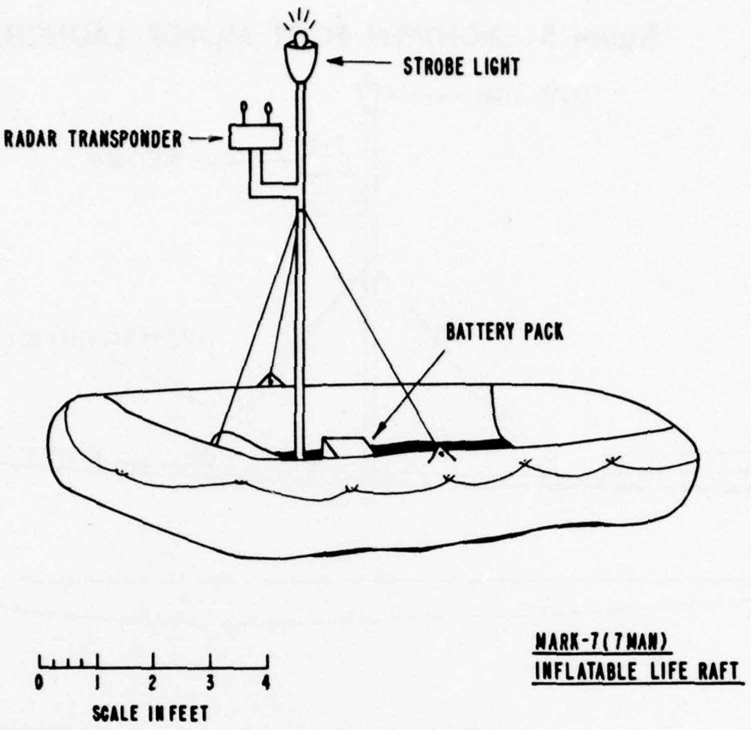

STROBE LIGHT
RADAR TRANSPONDER
BATTERY PACK
0 1 2 3 4
SCALE IN FEET
MARK-7 (7 MAN)
INFLATABLE LIFE RAFT

Figure 4—SIXTEEN FOOT OUTBOARD MOTOR BOAT.

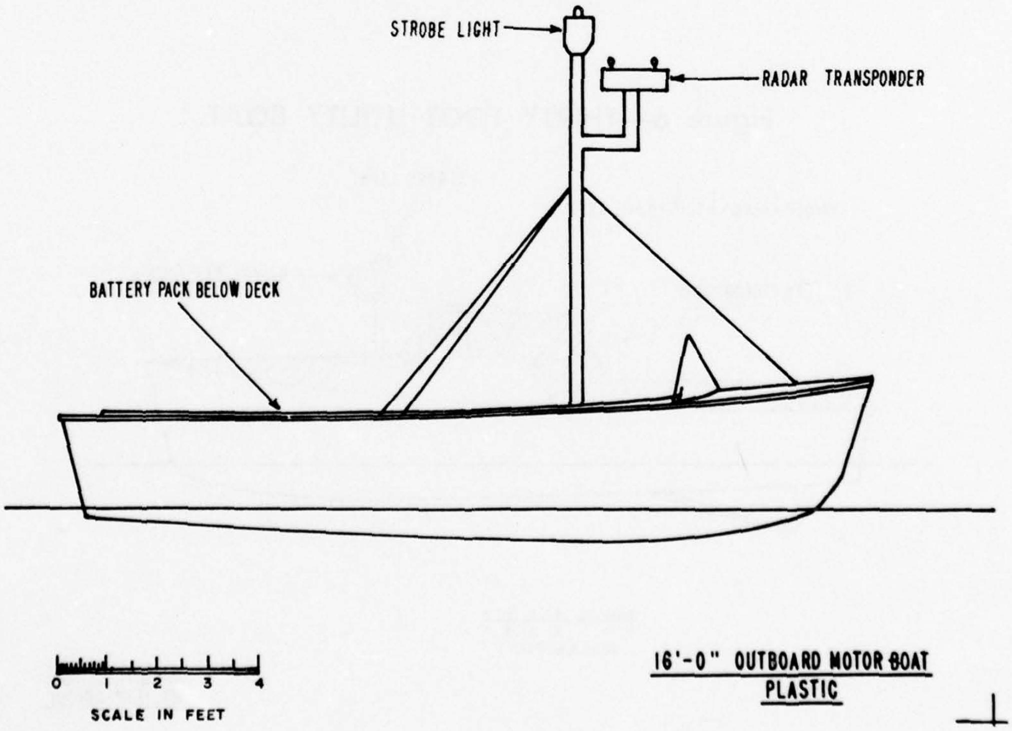

STROBE LIGHT
RADAR TRANSPONDER
BATTERY PACK BELOW DECK
0 1 2 3 4
SCALE IN FEET
16'-0" OUTBOARD MOTOR BOAT
PLASTIC

Figure 5—EIGHTEEN FOOT MOTOR LAUNCH.

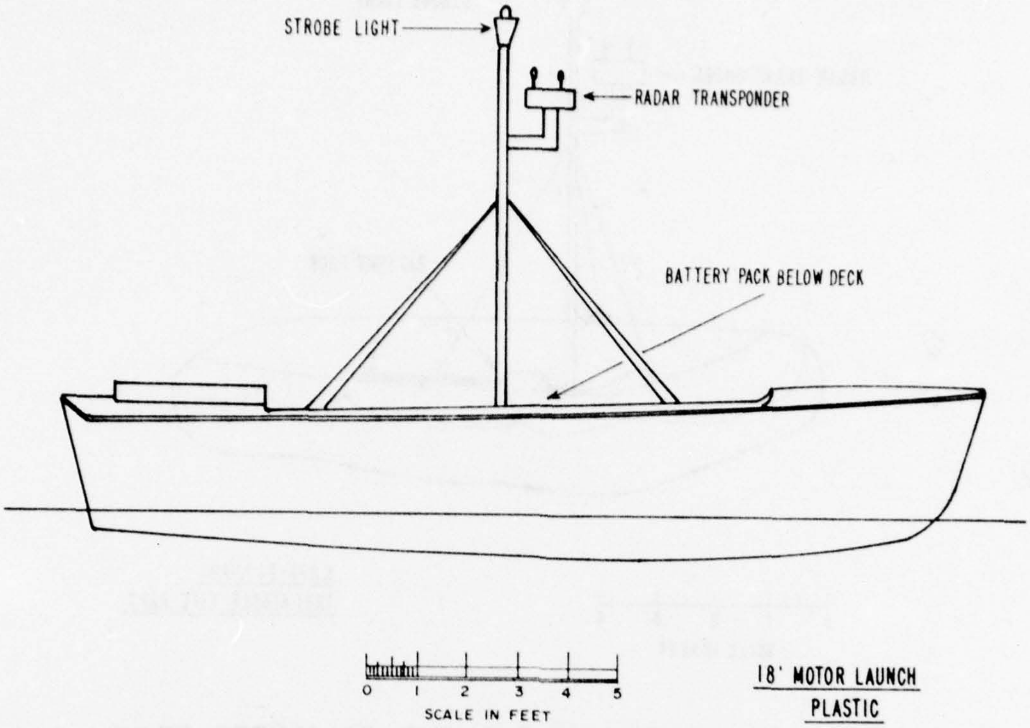

STROBE LIGHT
RADAR TRANSPONDER
BATTERY PACK BELOW DECK
0 1 2 3 4 5
SCALE IN FEET
18' MOTOR LAUNCH
PLASTIC

Figure 6—THIRTY FOOT UTILITY BOAT.

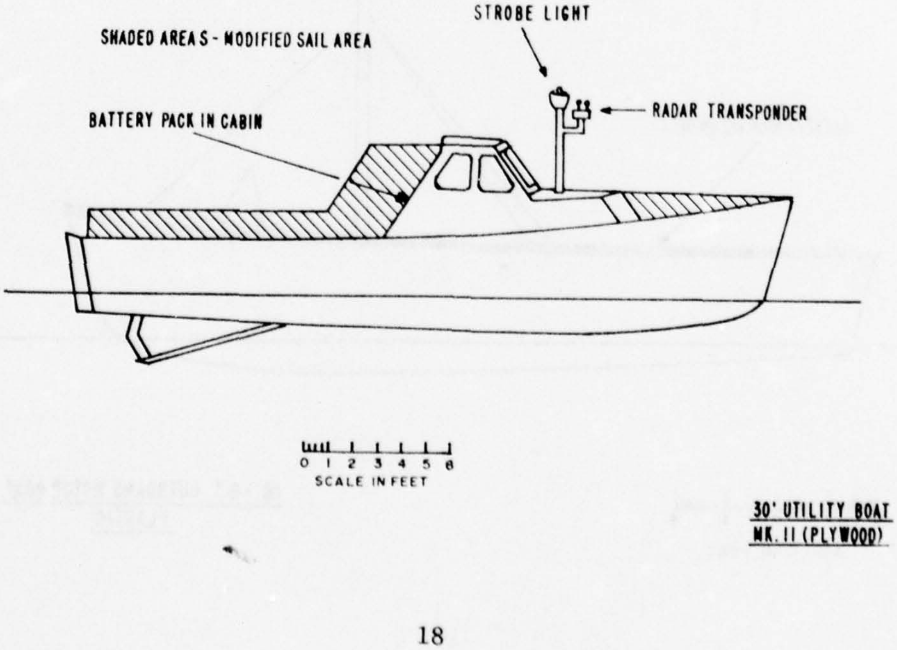

STROBE LIGHT
SHADED AREAS - MODIFIED SAIL AREA
BATTERY PACK IN CABIN
RADAR TRANSPONDER
0 1 2 3 4 5 6
SCALE IN FEET
30' UTILITY BOAT
MK. II (PLYWOOD)

Figure 7—SAMPLE LEEWAY GRAPH SEGMENTS.

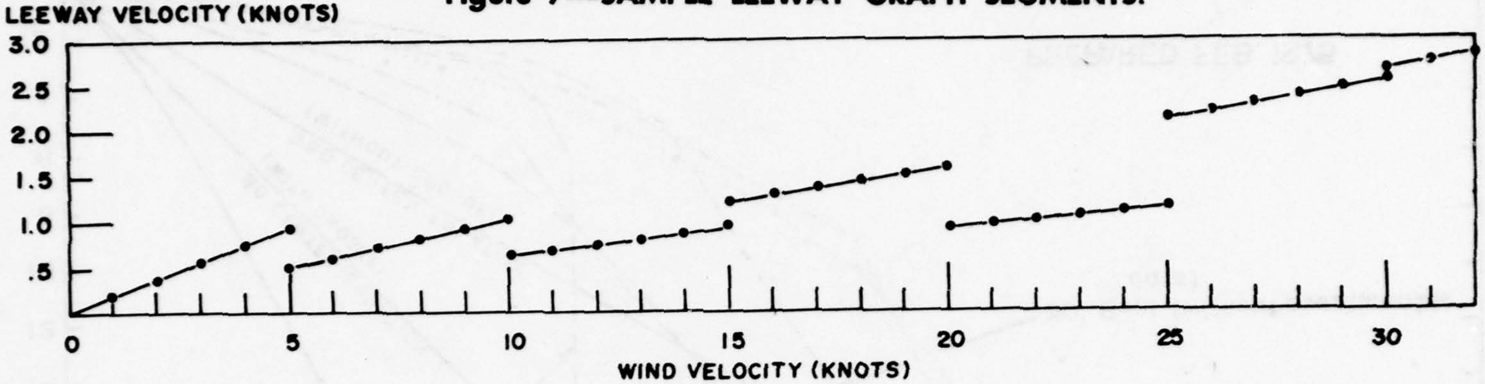
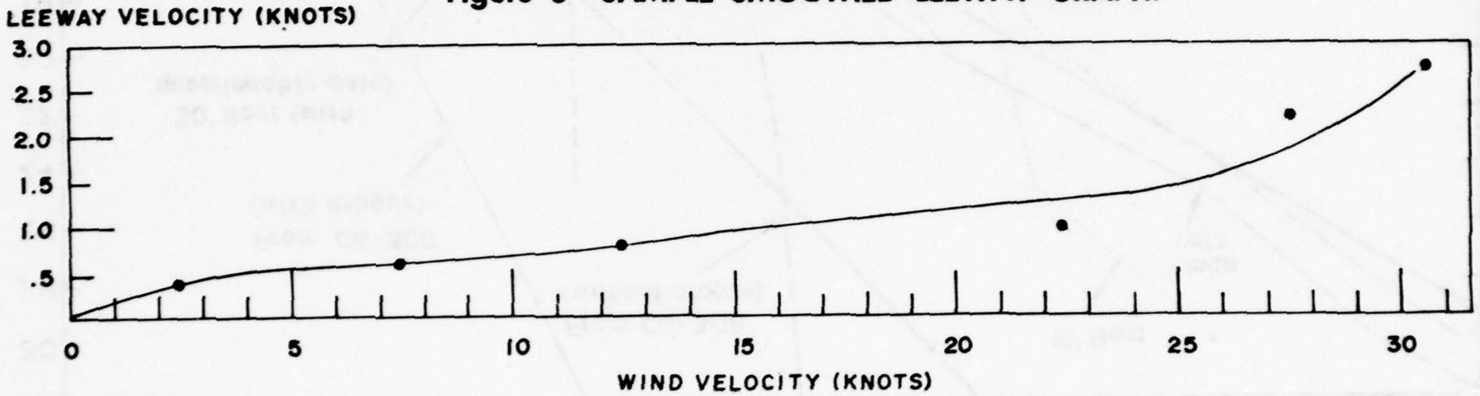


Figure 8—SAMPLE SMOOTHED LEEWAY GRAPH.



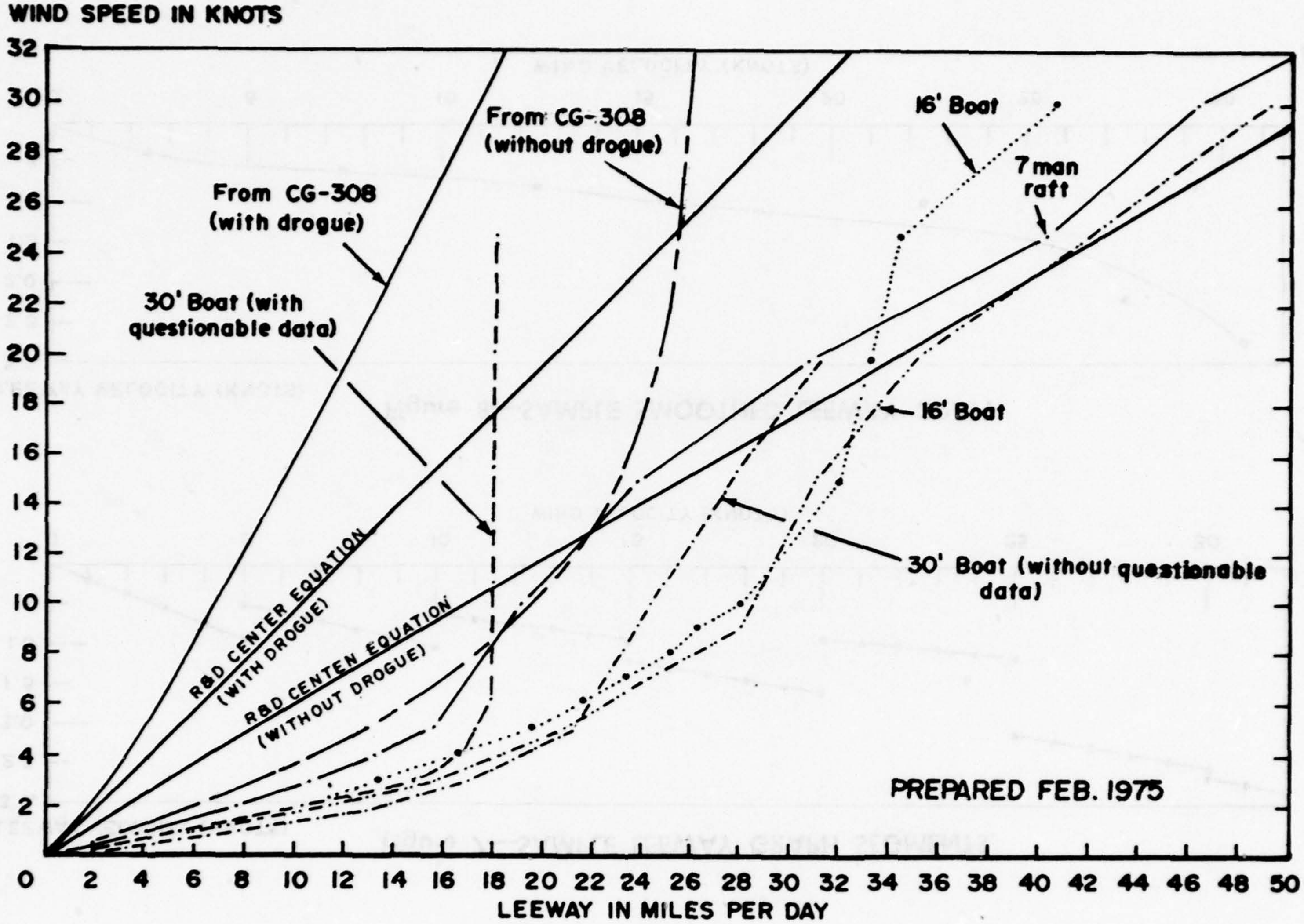


Fig. 9 Preliminary Leeway vs Wind Speed

Appendix 1

This appendix contains a listing of the observational data used in technical report.

```
NOTE1***  THE FIGURES 999 IN THE DROGUE OR DRIFT OBJECT BEARING IS A SPECIAL
          CODE USED IN SOME CASES DURING DATA PROCESSING TO INDICATE MISSING DATA.
                                                                                          **ABREVIATIONS**
NOTE2***  WIND DATA CODE EXPLAINATION**
       0= RELATIVE WIND RECORDED IN DEGREES TRUE                                          WDC= WIND DATA CODE
       1= RELATIVE WIND RECORDED RELATIVE TO SHIP HEAD                                    CD1= CURRENT DROGUE 1
       2= QUESTIONABLE WIND DATA                                                          CD2= CURRENT DROGUE 2
       3= NO WIND DATA RECORDED                                                           HOW= HOW BEARINGS WERE OBTAINED
       4= WIND RECORDED IN DEGREES TRUE                                                     R= RADAR
                                                                                            V= VISUAL
                                                                                            A= ALONGSIDE

                                H                 H     7-MAN     H                H                 H                 H              H     REL.            W
                    REFERENCE   O        CD-1     O     RAFT      O   16FT BOAT    O   18FT BOAT     O   30FT BOAT     O     CD-2     O     WIND    SHIP    D
DAY   TIME(Z)      RANGE  BRG   W     RANGE BRG   W   RANGE BRG   W   RANGE  BRG   W   RANGE  BRG    W   RANGE  BRG    W   RANGE BRG  W   DIR SPD CRS SPD C

           37 OBSERVATIONS                  SAR RES. #1         RUN 1

 6       900       21150  276 R     480 116 R     0    0         0     0        0     0         0     0        0   0     250 19   0   0  4
 6       903       21100  278 R     650 112 R     0    0         0     0        0     0         0     0        0   0       0  0   0   0  3
 6       906       20850  276 R     800 132 R     0    0         0     0        0     0         0     0        0   0       0  0   0   0  3
 6       909       20750  276 R    1010 120 R     0    0         0     0        0     0         0     0        0   0       0  0   0   0  3
 6       912       20600  275 R    1000 121 R     0    0         0     0        0     0         0     0        0   0       0  0   0   0  3
 6       915       20760  275 R     970 124 R     0    0         0     0        0     0         0     0        0   0       0  0   0   0  3
 6       918       20870  275 R     930 126 R     0    0         0     0        0     0         0     0        0   0       0  0   0   0  3
 6       921       21050  275 R     850 128 R     0    0         0     0        0     0         0     0        0   0       0  0   0   0  3
 6       924       21000  276 R     750 128 R     0    0         0     0        0     0         0     0        0   0       0  0   0   0  3
 6       927       21100  275 R     630 126 R     0    0         0     0        0     0         0     0        0   0       0  0   0   0  3
 6       930       21100  278 R     780 104 R     0    0         0     0        0     0         0     0        0   0       0  0   0   0  3
 6       933       21000  278 R     900 102 R     0    0         0     0        0     0         0     0        0   0       0  0   0   0  3
 6       936       20900  278 R     970 100 R     0    0         0     0        0     0         0     0        0   0       0  0   0   0  3
 6       939       20960  278 R     900 101 R     0    0         0     0        0     0         0     0        0   0       0  0   0   0  3
 6       942       21050  277 R     860 105 R     0    0         0     0        0     0         0     0        0   0       0  0   0   0  3
 6       945       21070  277 R     805 108 R     0    0         0     0        0     0         0     0        0   0       0  0   0   0  0
 6       948       21300  277 R     750 105 R     0    0         0     0        0     0         0     0        0   0       0  0   0   0  3
 6       951       21000  279 R    1070  91 R     0    0         0     0        0     0         0     0        0   0       0  0   0   0  3
 6       954       21100  279 R    1230  89 R     0    0         0     0        0     0         0     0        0   0       0  0   0   0  3
 6      1000       21000  280 R    1350  86 R     0    0         0     0        0     0         0     0        0   0     255 18   0   0  4
 6      1003       21500  278 R     970  93 R     0    0         0     0        0     0         0     0        0   0       0  0   0   0  3
 6      1006       21750  278 R     900 104 R     0    0         0     0        0     0         0     0        0   0       0  0   0   0  3
 6      1044        3700  220 R    1840  53 R     0    0         0     0        0     0         0     0        0   0       0  0   0   0  3
 6      1046        3775  226 R    1800  53 R     0    0         0     0        0     0         0     0        0   0       0  0   0   0  3
 6      1052        3900  223 R    1490  53 R     0    0         0     0        0     0         0     0        0   0       0  0   0   0  3
 6      1059        4750  225 R    1350  53 R     0    0         0     0        0     0         0     0        0   0     265 18   0   0  4
 6      1102        4250  225 R    1256  53 R     0    0         0     0        0     0         0     0        0   0       0  0   0   0  3
 6      1108        4350  227 R    1000  52 R     0    0         0     0        0     0         0     0        0   0       0  0   0   0  3
 6      1147        3200  226 R    2000  71 R     0    0         0     0        0     0         0     0        0   0       0  0   0   0  3
 6      1149        3260  226 R    1950  73 R     0    0         0     0        0     0         0     0        0   0       0  0   0   0  3
 6      1151        3325  226 R    1875  74 R     0    0         0     0        0     0         0     0        0   0       0  0   0   0  3
 6      1159        3575  228 R    1700  78 R     0    0         0     0        0     0         0     0        0   0       0  0   0   0  3
 6      1201        3665  228 R    1600  79 R     0    0         0     0        0     0         0     0        0   0     260 16   0   0  4
 6      1204        4600  234 R    1050  82 R     0    0         0     0        0     0         0     0        0   0       0  0   0   0  3
 6      1205        4650  235 R    1000  86 R     0    0         0     0        0     0         0     0        0   0       0  0   0   0  3
 6      1206        4650  235 R    1225  87 R     0    0         0     0        0     0         0     0        0   0       0  0   0   0  3
 6      1207        4725  236 R    1300  87 R     0    0         0     0        0     0         0     0        0   0       0  0   0   0  3
```

```
                                         (continued)
         28 OBSERVATIONS            SAR RES. #1       RUN 2

 6   1828    21900  279 R    900  95 R   0   0    0   0    0   0    0   0    0   0   276 10    0  0  4
 6   1843    22400  280 R   1065  76 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
 6   1915    23000  281 R   1300  55 R   0   0    0   0    0   0    0   0    0   0   270  8    0  0  4
 6   1930    23600  282 R   1950  32 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
 6   1945    24200  285 R   2100  28 R   0   0    0   0    0   0    0   0    0   0   270  6    0  0  4
 6   2000    22250  284 R   2350  23 R   0   0    0   0    0   0    0   0    0   0   270  6    0  0  4
 6   2015    24400  283 R    900  43 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
 6   2030    24300  284 R    800  40 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
 6   2045    24100  283 R    750  21 R   0   0    0   0    0   0    0   0    0   0   270  2    0  0  4
 6   2100    24100  283 R    700  13 R   0   0    0   0    0   0    0   0    0   0   270  2    0  0  4
 6   2115    20750  282 R   1350  46 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
 6   2130    20750  280 R   2600  98 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
 6   2145    20150  279 R   2800 102 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
 6   2200    20000  278 R   2750  99 R   0   0    0   0    0   0    0   0    0   0   170  2    0  0  2
 6   2215    20400  276 R   2250 100 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
 6   2230    20750  267 R   1700  94 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
 6   2245    20800  275 R   1450  77 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
 6   2300    20960  216 R   1100  51 R   0   0    0   0    0   0    0   0    0   0   210 10    0  0  4
 6   2315    21500  274 R   1100  32 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
 6   2330    21250  273 R   1150  10 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
 6   2345    21400  272 R   1300 345 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
 6   2400    21600  210 R   1800 317 R   0   0    0   0    0   0    0   0    0   0   240  8    0  0  4
 7     15    20600  268 R   2600 338 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
 7     30    20250  269 R   3350 352 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
 7     45    20550  268 R   3350 342 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
 7    100    20900  265 R   3400 330 R   0   0    0   0    0   0    0   0    0   0   140 10    0  0  4
 7    115    21400  261 R   3550 326 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
 7    130    21300  259 R   3756 317 R   0   0    0   0    0   0    0   0    0   0   115 16    0  0  4

         94 OBSERVATIONS            SAR RES. #1       RUN 3

10    215     4400  242 R   1550  99 R   0   0    0   0    0   0    0   0    0   0   295 17    0  0  4
10    230     4500  243 R   1050 123 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
10    245     4700  243 R    900 150 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
10    300     4900  243 R    650 185 R   0   0    0   0    0   0    0   0    0   0   305 10    0  0  4
10    400     3800  229 R   1050 180 R   0   0    0   0    0   0    0   0    0   0   315 18    0  0  4
10    600     4400  195 R   1870 181 R   0   0    0   0    0   0    0   0    0   0   320 17    0  0  4
10    615     5550  186 R   2400 168 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
10    630     4800  191 R   1350 179 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
10    645     4250  192 R    650 175 R   0   0    0   0    0   0    0   0    0   0   320 14    0  0  4
10    730     4800  201 R   1160 251 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
10    750     4350  204 R   1150 284 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
10    808     3670  196 R   1050 337 R   0   0    0   0    0   0    0   0    0   0   320  8    0  0  4
10    830     5450  182 R   1100 146 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
10    845     5400  185 R   1050 157 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
10    900     5250  190 R    850 196 R   0   0    0   0    0   0    0   0    0   0   320  8    0  0  4
10    919     5400  190 R   1050 195 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
10    930     5050  188 R    800 187 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
10    945     5450  180 R   1550 155 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
10   1000     4850  180 R   1050 147 R   0   0    0   0    0   0    0   0    0   0   320 12    0  0  4
10   1018     4250  177 R    700 111 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
10   1030     4500  164 R   1550 124 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
10   1045     4100  171 R   1100 130 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
10   1100     3600  174 R    700 136 R   0   0    0   0    0   0    0   0    0   0   325 12    0  0  4
10   1115     4450  165 R   1750 144 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
10    130     3750  155 R   1400 125 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
10   1203     3456  146 R   1450 108 R   0   0    0   0    0   0    0   0    0   0   320 12    0  0  4
10   1215     3600  145 R   1400 133 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
10   1230     3350  147 R   1150 152 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
10   1245     3000  142 R    700 164 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
10   1300     3200  143 R    950 187 R   0   0    0   0    0   0    0   0    0   0   320 12    0  0  4
10   1315     3450  129 R    950 155 R   0   0    0   0    0   0    0   0    0   0     0  0    0  0  3
```

```
NOTE1***  THE FIGURES 999 IN THE DROGUE OR DRIFT OBJECT BEARING IS A SPECIAL
          CODE USED IN SOME CASES DURING DATA PROCESSING TO INDICATE MISSING DATA.        **ABREVIATIONS**

NOTE2***  WIND DATA CODE EXPLAINATION**                                                  WDC= WIND DATA CODE
     0= RELATIVE WIND RECORDED IN DEGREES TRUE                                           CD1= CURRENT DROGUE 1
     1= RELATIVE WIND RECORDED RELATIVE TO SHIP HEAD                                     CD2= CURRENT DROGUE 2
     2= QUESTIONABLE WIND DATA                                                           HOW= HOW BEARINGS WERE OBTAINED
     3= NO WIND DATA RECORDED                                                              R= RADAR
     4= WIND RECORDED IN DEGREES TRUE                                                      V= VISUAL
                                                                                           A= ALONGSIDE

                           H               H   7-MAN  H                 H                 H                 H              W   REL.         W
             REFERENCE     O     CD-1      O   RAFT   O  16FT BOAT      O  18FT BOAT      O  30FT BOAT      O    CD-2      O   WIND   SHIP  O
DAY TIME(Z)  RANGE  BRG    W  RANGE BRG    W  RANGE BRG W  RANGE  BRG    W  RANGE  BRG    W  RANGE  BRG    W  RANGE BRG   W  DIR SPD CRS SPD C

10     1330   3400  120 R    650  136 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
10     1345   3800  120 R    900  151 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
10     1400   3750  117 R    680  175 R      0   0        0    0        0    0        0    0        0   0     0 18    0   0  4
10     1415   4550  113 R   1100  153 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
10     1500   4900  110 R    750  175 R      0   0        0    0        0    0        0    0        0   0     0 12    0   0  4
10     1515   4600  111 R   1000  225 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
10     1530   5300  108 R    650  190 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
10     1545   6850  101 R    120  109 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
10     1600   7100   98 R   1250   82 R      0   0        0    0        0    0        0    0        0   0     0 12    0   0  4
10     1615   7100  105 R   1050  108 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
10     1630   6600  117 R   1650  197 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
10     1645   6400  118 R   1550  215 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
10     1700   6150  117 R   1550  233 R      0   0        0    0        0    0        0    0        0   0     0 11    0   0  4
10     1715   6300  115 R   1300  244 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
10     1730   6450  113 R   1100  257 R      0   0        0    0        0    0        0    0        0   0     0 12    0   0  4
10     1938   6050   68 R    600  172 R      0   0        0    0        0    0        0    0        0   0     0 11    0   0  4
10     1945   6350   72 R   1100  180 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
10     2000   5870   67 R    830  223 R      0   0        0    0        0    0        0    0        0   0     0  7    0   0  4
10     2015   5800   67 R   1100  214 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
10     2030   6200   67 R   1150  174 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
10     2045   6600   66 R   1450  144 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
10     2100   6500   64 R   1800  137 R      0   0        0    0        0    0        0    0        0   0   340 10    0   0  4
10     2115   6800   61 R   1950  131 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
10     2130   7050   59 R   2200  126 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
10     2145   6600   51 R   1600  130 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
10     2200   6700   47 R   1650  136 R      0   0        0    0        0    0        0    0        0   0   325 12    0   0  4
10     2215   6675   42 R   1700  144 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
10     2230   6900   54 R   1400  151 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
10     2245   7400   26 R    800  175 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
10     2300   7550   22 R   1000  182 R      0   0        0    0        0    0        0    0        0   0   225 20    0   0  2
10     2315   8250   20 R   1150  179 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
10     2330   8700   12 R   1400  185 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
11        0  10900   11 R   1820  189 R      0   0        0    0        0    0        0    0        0   0   340 10    0   0  4
11       15  11550   12 R    850  159 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
11       30  12000   13 R   1050  140 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
11       45  13150   15 R   1300  118 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
11      100  13800   14 R   1050  146 R      0   0        0    0        0    0        0    0        0   0   355 10    0   0  4
11      115  14400   13 R   1100  152 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
11      130  14900   12 R    120   57 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
11      145  15400   12 R   1250  160 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
11      200  15900   12 R   1400  164 R      0   0        0    0        0    0        0    0        0   0   330 11    0   0  4
11      215  16400   11 R   1450  169 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
11      230  16800   11 R   1550  169 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
11      245  17200   12 R   1700  174 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
11      300  17600   12 R   1800  174 R      0   0        0    0        0    0        0    0        0   0   330 12    0   0  4
11      315  17950   11 R   1900  176 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
11      330  19200   11 R   1150  185 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
11      345  19400   10 R   1450  205 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
11      400  19700    9 R   1700  205 R      0   0        0    0        0    0        0    0        0   0   340 15    0   0  4
11      415  19900    9 R   1950  209 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
11      430  20600    8 R   1750  210 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
11      445  21750    9 R   1250  224 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
11      500  21900    9 R   1450  222 R      0   0        0    0        0    0        0    0        0   0   340 18    0   0  4
11      515  22100    8 R   1700  222 R      0   0        0    0        0    0        0    0        0   0     0  0    0   0  3
```

(continued)

```
11   530   22300    8 R   1950 220 R     0    0      0    0      0    0      0    0      0    0   340 18    0   0  4
11   545   23400    7 R   1500 228 R     0    0      0    0      0    0      0    0      0    0     0  0    0   0  3
11   600   24300    8 R   1200 241 R     0    0      0    0      0    0      0    0      0    0   340 17    0   0  4
11   615   24600    6 R   1570 235 R     0    0      0    0      0    0      0    0      0    0     0  0    0   0  3
11   630   24350    5 R   1950 234 R     0    0      0    0      0    0      0    0      0    0     0  0    0   0  3
11   645   25100    5 R   2270 234 R     0    0      0    0      0    0      0    0      0    0     0  0    0   0  3
11   700   25420    5 R   2500 232 R     0    0      0    0      0    0      0    0      0    0   340 18    0   0  4
11   730   29CT5    6 R    650 201 R     0    0      0    0      0    0      0    0      0    0     0  0    0   0  3
11   815   28250    8 R   1830 230 R     0    0      0    0      0    0      0    0      0    0   340 28    0   0  4


NOTE1***  THE FIGURES 999 IN THE DROGUE OR DRIFT OBJECT BEARING IS A SPECIAL          **ABREVIATIONS**
          CODE USED IN SOME CASES DURING DATA PROCESSING TO INDICATE MISSING DATA.

NOTE2***  WIND DATA CODE EXPLAINATION**                                               WDC= WIND DATA CODE
      0= RELATIVE WIND RECORDED IN DEGREES TRUE                                       CD1= CURRENT DROGUE 1
      1= RELATIVE WIND RECORDED RELATIVE TO SHIP HEAD                                 CD2= CURRENT DROGUE 2
      2= QUESTIONABLE WIND DATA                                                       HOW= HOW BEARINGS WERE OBTAINED
      3= NO WIND DATA RECORDED                                                          R= RADAR
      4= WIND RECORDED IN DEGREES TRUE                                                  V= VISUAL
                                                                                        A= ALONGSIDE


                          H               H   7-MAN    H            H            H             H            H    REL.           W
               REFERENCE  O      CD-1     O   RAFT     O  16FT BOAT O  18FT BOAT O  30FT BOAT  O    CD-2    O    WIND    SHIP   D
DAY  TIME(Z)   RANGE  BRG W   RANGE BRG W  RANGE BRG W  RANGE  BRG W RANGE  BRG W  RANGE  BRG W  RANGE BRG W  DIR SPD CRS SPD C

        18 OBSERVATIONS              BOMEXC $/69          RUN 1

24     30    10500  323 R   12600 143 R   8500 210 R      0    0      0    0      0    0      0    0   240 14  195  0  1
24     50    10350  323 R   13100 143 R   8700 210 R      0    0      0    0      0    0      0    0   240 16  205  0  1
24    110    10200  321 R   13600 142 R   9000 212 R      0    0      0    0      0    0      0    0   250 14  190  0  1
24    130    10100  318 R   13900 143 R   9100 213 R      0    0      0    0      0    0      0    0   250 13  195  0  1
24    150    10000  315 R   14300 142 R   9250 213 R      0    0      0    0      0    0      0    0   240 10  210  0  1
24    210     9800  314 R   14600 140 R   9400 214 R      0    0      0    0      0    0      0    0   250 13  195  0  1
24    230     9500  312 R   14600 139 R      0   0        0    0      0    0      0    0      0    0   240 14  210  0  1
24    250    12200  349 R   14600 120 R   5300 219 R      0    0      0    0      0    0      0    0   270  7  200  6  1
24    310    14200  356 R   14100 114 R   4700 236 R      0    0      0    0      0    0      0    0   245 15  195  0  1
24    330    14250  355 R   14300 112 R   5050 236 R      0    0      0    0      0    0      0    0   250 14  190  0  1
24    350    14250  354 R   15000 111 R   5350 236 R      0    0      0    0      0    0      0    0   270  5  190  0  1
24    410    14300  356 R   15300 110 R   5500 238 R      0    0      0    0      0    0      0    0   250 15  198  0  1
24    430    17100  356 R   15900 109 R   5500 238 R      0    0      0    0      0    0      0    0   260 16  195  0  1
24    450    16850  356 R   16000 109 R   5350 231 R      0    0      0    0      0    0      0    0   240 17  199  0  1
24    510    16700  356 R   16400 108 R   5250 233 R      0    0      0    0      0    0      0    0   245 18  200  0  1
24    530    16350  358 R   17100 107 R   5000 225 R      0    0      0    0      0    0      0    0   250 14  200  0  1
24    550    15700    8 R   17350 106 R   5000 220 R      0    0      0    0      0    0      0    0   260 15  195  0  1
                [illegible] R   18000 106 R   5100 217 R      0    0      0    0      0    0      0    0   245 17  200  0  1
```

```
                                        (continued)

          57 OBSERVATIONS          BOMEXC 5/69        RUN 2

27   110   13500 333 R   5535 353 R   5980 350 R   0   0   0   0   0   0   0   0   248 10 188 2 1
27   130   13150 332 R   5370 358 R   5850 353 R   0   0   0   0   0   0   0   0   248  7 180 2 1
27   150   13000 330 R   5275   0 R   5750 354 R   0   0   0   0   0   0   0   0   241 11 185 2 1
27   210   12850 330 R   5380   6 R   5720 356 R   0   0   0   0   0   0   0   0   243 12 181 2 1
27   230   12850 330 R   5400  10 R   5700 357 R   0   0   0   0   0   0   0   0   245 13 177 2 1
27   250   12650 330 R   5550  16 R   5675   0 R   0   0   0   0   0   0   0   0   245 13 192 2 1
27   310   12350 328 R   5675  22 R   5585   3 R   0   0   0   0   0   0   0   0   240 12 185 2 1
27   330   12050 328 R   5770  26 R   5465   5 R   0   0   0   0   0   0   0   0   250 14 180 2 1
27   350   12000 329 R   5850  33 R   5600   7 R   0   0   0   0   0   0   0   0   250 11 184 2 1
27   410   11900 330 R   6400  36 R   5550   8 R   0   0   0   0   0   0   0   0   250 14 180 0 1
27   430   12450 342 R   6750  40 R   5500  12 R   0   0   0   0   0   0   0   0   240 14 184 0 1
27   456   13800 354 R   7250  44 R   5450  16 R   0   0   0   0   0   0   0   0   240 15 180 0 1
27   510   13550 357 R   7650  48 R   5350  19 R   0   0   0   0   0   0   0   0   250 14 172 0 1
27   530   13300 356 R   8100  50 R   5300  21 R   0   0   0   0   0   0   0   0   260  9 201 2 1
27   550   13150 357 R   8300  53 R   5150  26 R   0   0   0   0   0   0   0   0   245 10 195 2 1
27   610   13000 356 R   8500  55 R   5100  28 R   0   0   0   0   0   0   0   0   250 11 184 2 1
27   630   12900 357 R   8750  57 R   5200  33 R   0   0   0   0   0   0   0   0   250 10 180 2 1
27   650   12500 356 R   9100  60 R   5150  37 R   0   0   0   0   0   0   0   0   245 18 174 2 1
27   710   12200 356 R   9750  61 R   5300  42 R   0   0   0   0   0   0   0   0   250 14 180 0 1
27   730   11900 356 R   9950  63 R   5300  46 R   0   0   0   0   0   0   0   0   245 15 182 2 1
27   750   11200 355 R  10350  63 R   5450  48 R   0   0   0   0   0   0   0   0   245 11 175 0 1
27   810   10800 354 R  10650  64 R   5500  48 R   0   0   0   0   0   0   0   0   245 12 174 0 1
27   830   10800 354 R  11100  65 R   5600  52 R   0   0   0   0   0   0   0   0   255 13 196 0 1
27   850   10600 354 R  11500  65 R   5800  52 R   0   0   0   0   0   0   0   0   260 13 199 0 1
27   910   10400 353 R  11900  65 R   6100  54 R   0   0   0   0   0   0   0   0   260 11 203 0 1
27   930   10000 354 R  12400  68 R   6200  54 R   0   0   0   0   0   0   0   0   255 12 211 0 1
27   950   11300   5 R  13050  69 R   6350  58 R   0   0   0   0   0   0   0   0   270  9 203 2 1
27  1010   13700  16 R  13650  70 R   6800  58 R   0   0   0   0   0   0   0   0   270  9 212 0 1
27  1030   13800  19 R  14200  71 R   7100  59 R   0   0   0   0   0   0   0   0   265  3 205 0 1
27  1050   11700  18 R  14200  77 R   6350  65 R   0   0   0   0   0   0   0   0    60 12   0 9 1
27  1110    8900  16 R  13100  88 R   5050  99 R   0   0   0   0   0   0   0   0    15 16  82 4 1
27  1130    6600   2 R  11700  95 R      0 999     0   0   0   0   0   0   0   0    50 14  47 3 1
27  1150    5900  19 R  13500 102 R   4375 128 R   0   0   0   0   0   0   0   0   240 14 220 0 1
27  1210    5800  19 R  14000 102 R   4950 131 R   0   0   0   0   0   0   0   0   250 19 200 0 1
27  1230    5700  20 R  14800 102 R   5450 133 R   0   0   0   0   0   0   0   0   255  6 200 0 1
27  1250    5300  20 R  15300 103 R   5500 135 R   0   0   0   0   0   0   0   0   250  8 200 0 1
27  1310    4500 358 R  14200 104 R      0 999     0   0   0   0   0   0   0   0    30 25  70 5 1
27  1330    4600 348 R  13800 102 R      0 999     0   0   0   0   0   0   0   0   245 16 240 5 1
27  1350    6050  21 R  15060 102 R      0 999     0   0   0   0   0   0   0   0   260 14 210 0 1
27  1410    8650  31 R  15500 103 R      0 999     0   0   0   0   0   0   0   0   255 16 210 0 1
27  1430   10250  37 R  15100 102 R      0 999     0   0   0   0   0   0   0   0    10 23  80 5 1
27  1450    7000  27 R  15450 109 R   5600 192 R   0   0   0   0   0   0   0   0    30 25  70 5 1
27  1510    5600   9 R  12300 113 R   6800 208 R   0   0   0   0   0   0   0   0   110 15 355 0 1
27  1530    5650   7 R  12700 112 R   6350 209 R   0   0   0   0   0   0   0   0    95 15   0 0 1
27  1550    5650   0 R  13350 110 R   6200 208 R   0   0   0   0   0   0   0   0   100 15   4 0 1
27  1610    5850   3 R  13700 108 R   5900 210 R   0   0   0   0   0   0   0   0   100 15   4 0 1
27  1630    5500   1 R  13600 108 R   5350 211 R   0   0   0   0   0   0   0   0   110 17 350 0 1
27  1650    5460   0 R  13910 105 R   4760 209 R   0   0   0   0   0   0   0   0   100 17   2 0 1
27  1710    5530 359 R  14200 105 R   4500 207 R   0   0   0   0   0   0   0   0   110 15   0 0 1
27  1730    5655 357 R  14700 102 R   4375 206 R   0   0   0   0   0   0   0   0    95 17   0 0 1
27  1750    5750 356 R  14950 101 R   4015 205 R   0   0   0   0   0   0   0   0    70 15   0 5 1
27  1810     505 309 R  16200 118 R   8650 191 R   0   0   0   0   0   0   0   0   110 17   0 0 1
27  1830     505 309 R  16900 118 R   8400 194 R   0   0   0   0   0   0   0   0   120 16 350 0 1
27  1850     500 309 R  17050 116 R   8150 197 R   0   0   0   0   0   0   0   0   110 14 350 0 1
27  1910    1000 344 R  17450 112 R   7900 197 R   0   0   0   0   0   0   0   0   110 16 344 2 1
27  1930    2955  35 R  18000 112 R   7750 200 R   0   0   0   0   0   0   0   0   110 15 345 0 1
27  1950    5950  52 R  18500 110 R   7700 202 R   0   0   0   0   0   0   0   0   105 14 345 0 1
```

```
NOTE1***  THE FIGURES 999 IN THE DROGUE OR DRIFT OBJECT BEARING IS A SPECIAL
          CODE USED IN SOME CASES DURING DATA PROCESSING TO INDICATE MISSING DATA.                 **ABREVIATIONS**

NOTE2***  WIND DATA CODE EXPLAINATION**                                                            WDC= WIND DATA CODE
     0= RELATIVE WIND RECORDED IN DEGREES TRUE                                                     CD1= CURRENT DROGUE 1
     1= RELATIVE WIND RECORDED RELATIVE TO SHIP HEAD                                               CD2= CURRENT DROGUE 2
     2= QUESTIONABLE WIND DATA                                                                     HOW= HOW BEARINGS WERE OBTAINED
     3= NO WIND DATA RECORDED                                                                        R= RADAR
     4= WIND RECORDED IN DEGREES TRUE                                                                V= VISUAL
                                                                                                     A= ALONGSIDE

                             H              H     7-MAN    H                H                H                 W               H     REL.         W
               REFERENCE     O       CD-1   O     RAFT     O   16FT BOAT    O   18FT BOAT    O    30FT BOAT    O       CD-2    O     WIND   SHIP   D
DAY  TIME(Z)   RANGE  BRG    W   RANGE BRG  W   RANGE BRG  W   RANGE  BRG   W   RANGE  BRG   W    RANGE  BRG   W   RANGE BRG   W   DIR SPD CRS SPD C

        10 OBSERVATIONS                SAR RES.  3           RUN 1

22    1715       3400  135 R    1200 291 R     950 288 R       0      0         0      0          0      0          0   0       335  7    0   0  4
22    1739       3550  126 R    1200 302 R     700 299 R       0      0         0      0          0      0          0   0       340  3    0   0  4
22    1800       3700  120 R    1400 310 R     500 314 R       0      0         0      0          0      0          0   0       340  2    0   0  4
22    1830       4000  118 R    1550 314 R     700 346 R       0      0         0      0          0      0          0   0       350  2    0   0  4
22    1900       4450  114 R    1600 319 R     950   5 R       0      0         0      0          0      0          0   0       350  3    0   0  4
22    1930       3150  125 R    3200 295 R    2050 312 R       0      0         0      0          0      0          0   0       350  3    0   0  4
22    2000       3550  140 R    3600 282 R    2450 300 R       0      0         0      0          0      0          0   0         0  0    0   0  4
22    2030       3900  148 R    4200 276 R    3150 299 R       0      0         0      0          0      0          0   0         0  0    0   0  4
22    2100       4300  159 R    4800 273 R    4000 291 R       0      0         0      0          0      0          0   0         0  0    0   0  4
22    2130       4620  130 R    3250 288 R    3750 321 R       0      0         0      0          0      0          0   0         0  0    0   0  4

        15 OBSERVATIONS                SAR RES.  3           RUN 2

23    1230       3900  351 R     910 255 R     700 266 R       0      0         0      0          0      0          0   0       170 15    0   0  4
23    1300       3400  355 R    1150 210 R     300 292 R       0      0         0      0          0      0          0   0       180 18    0   0  4
23    1330       3350  355 R    1450 197 R     500 357 R       0      0         0      0          0      0          0   0       190 10    0   0  4
23    1400       3000  337 R    2350 206 R     800 332 R       0      0         0      0          0      0          0   0       195 14    0   0  4
23    1430       3150  325 R    3150 212 R    1250 325 R       0      0         0      0          0      0          0   0       190 10    0   0  4
23    1500       3550  310 R    3110 216 R    1800 323 R       0      0         0      0          0      0          0   0       200 12    0   0  4
23    1530       2600  330 R    3600 193 R    1100  19 R       0      0         0      0          0      0          0   0         0  0    0   0  0
23    1600       2650  347 R    3450 178 R       0   0 A       0      0         0      0          0      0          0   0       225 16    0   0  4
23    1815       4200   17 R    2800 128 R    1050  34 R       0      0         0      0          0      0          0   0       220 16    0   0  4
23    1830       4000   12 R    2400 133 R    1350  18 R       0      0         0      0          0      0          0   0       210 15    0   0  4
23    1900       3500    1 R    1850 152 R    2050   0 R       0      0         0      0          0      0          0   0       220 14    0   0  4
23    1930        950   22 R    4250 164 R     900  60 R       0      0         0      0          0      0          0   0       210 12    0   0  4
23    2000        600   74 R    4750 164 R    1400  67 R       0      0         0      0          0      0          0   0       215  8    0   0  4
23    2030        300  178 R    5050 173 R    1300  51 R       0      0         0      0          0      0          0   0       220 10    0   0  4
23    2100       1450  207 R    5300 183 R    1400  25 R       0      0         0      0          0      0          0   0       230 14    0   0  4

        10 OBSERVATIONS                SAR RES.  3           RUN 3

24    1202       2400  209 R    1200 231 R    1040 221 R       0      0         0      0          0      0          0   0         0  0    0   0  3
24    1230       2150  200 R     860 198 R    1130 193 R       0      0         0      0          0      0          0   0        35  6    0   0  4
24    1300       1800  195 R     850 170 R    1340 178 R       0      0         0      0          0      0          0   0        35  6    0   0  4
24    1330       1410  193 R     900 155 R    1520 173 R       0      0         0      0          0      0          0   0        35  5    0   0  4
24    1400        750  212 R     610 130 R    1350 174 R       0      0         0      0          0      0          0   0        35  5    0   0  4
24    1430        450  213 R     910 125 R    1010 173 R       0      0         0      0          0      0          0   0        35  5    0   0  4
24    1500       1160  265 R     550 186 R    2210 201 R       0      0         0      0          0      0          0   0        35  5    0   0  4
24    1530       2150  322 R     800 359 R    1220 223 R       0      0         0      0          0      0          0   0        20 10    0   0  4
24    1600       2150  336 R     950  34 R    1250 203 R       0      0         0      0          0      0          0   0        55  4    0   0  4
24    1630       2000  347 R    1150  57 R     160 195 R       0      0         0      0          0      0          0   0        60  5    0   0  4
```

```
NOTE1***  THE FIGURES 999 IN THE DROGUE OR DRIFT OBJECT BEARING IS A SPECIAL
          CODE USED IN SOME CASES DURING DATA PROCESSING TO INDICATE MISSING DATA.          **ABBREVIATIONS**

NOTE2***  WIND DATA CODE EXPLAINATION**                                                    WDC= WIND DATA CODE
       0= RELATIVE WIND RECORDED IN DEGREES TRUE                                            CD1= CURRENT DROGUE 1
       1= RELATIVE WIND RECORDED RELATIVE TO SHIP HEAD                                      CD2= CURRENT DROGUE 2
       2= QUESTIONABLE WIND DATA                                                            HOW= HOW BEARINGS WERE OBTAINED
       3= NO WIND DATA RECORDED                                                               R= RADAR
       4= WIND RECORDED IN DEGREES TRUE                                                       V= VISUAL
                                                                                              A= ALONGSIDE

                                H            H     7-MAN   H               H               H                H               H    REL.         W
                   REFERENCE    O     CD-1   O     RAFT    O  16FT BOAT    O  18FT BOAT    O  30FT BOAT     O     CD-2      O    WIND   SHIP   D
DAY  TIME(Z)       RANGE  BRG   W  RANGE BRG W  RANGE BRG  W  RANGE  BRG   W  RANGE  BRG   W  RANGE  BRG    W  RANGE BRG    W  DIR SPD CRS SPD C

          40 OBSERVATIONS                    SAR RES.  2       RUN 1

20    540     15500  164 V   1200  73 V     0    0        0     0        0     0        0     0        0    0      30  5    0   0  4
20    550     15200  162 V   1350  67 V     0    0        0     0        0     0        0     0        0    0       0  5    0   0  4
20    600     14800  160 V   1500  60 V     0    0        0     0        0     0        0     0        0    0     350  4    0   0  4
20    610     14600  158 V   1750  58 V     0    0        0     0        0     0        0     0        0    0       0  5    0   0  4
20    620     14400  155 V   1900  56 V     0    0        0     0        0     0        0     0        0    0     350  5    0   0  4
20    630     14400  153 V   2100  54 V     0    0        0     0        0     0        0     0        0    0       0  5    0   0  4
20    640     14600  149 V   2250  65 V     0    0        0     0        0     0        0     0        0    0       0  5    0   0  4
20    650     16450  151 V   2150 127 V     0    0        0     0        0     0        0     0        0    0       0  5    0   0  4
20    700     15850  155 V   1250 175 V     0    0        0     0        0     0        0     0        0    0       0  5    0   0  4
20    710     15650  154 V   1200 182 V     0    0        0     0        0     0        0     0        0    0      10  4    0   0  4
20    720     15650  153 V   1050 180 V     0    0        0     0        0     0        0     0        0    0       5  5    0   0  4
20    730     15600  151 V    950 176 V     0    0        0     0        0     0        0     0        0    0      10  6    0   0  4
20    740     15600  150 V    900 172 V     0    0        0     0        0     0        0     0        0    0      10  8    0   0  4
20    750     15650  147 V    800 162 V     0    0        0     0        0     0        0     0        0    0      10  8    0   0  4
20    800     15700  158 V    750 145 V     0    0        0     0        0     0        0     0        0    0      10  6    0   0  4
20    810     16100  142 V    700 147 V     0    0        0     0        0     0        0     0        0    0      15  6    0   0  4
20    820     17150  142 V   1750 153 V     0    0        0     0        0     0        0     0        0    0      25  6    0   0  4
20    830     17600  161 V   2000 141 V     0    0        0     0        0     0        0     0        0    0      20  6    0   0  4
20    840     17800  141 V   2100 161 V     0    0        0     0        0     0        0     0        0    0      25  5    0   0  4
20    850     18100  140 V   2100 160 V     0    0        0     0        0     0        0     0        0    0      25  6    0   0  4
20    900     18600  140 V   2200 156 V     0    0        0     0        0     0        0     0        0    0      25  6    0   0  4
20    910     18950  138 V   2250 155 V     0    0        0     0        0     0        0     0        0    0      40  6    0   0  4
20    920     19250  138 V   2250 152 V     0    0        0     0        0     0        0     0        0    0      50  6    0   0  4
20    930     19650  136 V   2300 148 V     0    0        0     0        0     0        0     0        0    0      50  6    0   0  4
20    940     19050  137 V   1650 175 V     0    0        0     0        0     0        0     0        0    0      50  6    0   0  4
20    950     17550  140 V   2400 249 R     0    0        0     0        0     0        0     0        0    0      55  7    0   0  4
20   1000     18100  138 V   2300 229 R     0    0        0     0        0     0        0     0        0    0      50  6    0   0  4
20   1010     19050  134 V   1150 210 R     0    0        0     0        0     0        0     0        0    0      50  8    0   0  4
20   1020     19200  132 V    200 167 V     0    0        0     0        0     0        0     0        0    0      50  4    0   0  4
20   1030     19900  132 V    200 151 V     0    0        0     0        0     0        0     0        0    0       0  0    0   0  4
20   1040     19850  132 R    850 235 V     0    0        0     0        0     0        0     0        0    0      30  8    0   0  4
20   1050     19800  132 R   1000 242 V     0    0        0     0        0     0        0     0        0    0      18  7    0   0  4
20   1100     20150  132 R    900 245 V     0    0        0     0        0     0        0     0        0    0      15  8    0   0  4
20   1110     20500  132 R    800 250 V     0    0        0     0        0     0        0     0        0    0      10  8    0   0  4
20   1120     20950  133 R    650 256 V     0    0        0     0        0     0        0     0        0    0      15  7    0   0  4
20   1130     21150  132 R    500 260 V     0    0        0     0        0     0        0     0        0    0      18  8    0   0  4
20   1140     21150  132 R    450 272 V     0    0        0     0        0     0        0     0        0    0      25  9    0   0  4
20   1150     21650  131 R    450 291 V     0    0        0     0        0     0        0     0        0    0      31  7    0   0  4
20   1200     21600  130 R    400 316 V     0    0        0     0        0     0        0     0        0    0      31  7    0   0  4
20   1210     21950  130 R    450 343 V     0    0        0     0        0     0        0     0        0    0      30  7    0   0  4
```

(continued)

```
              9 OBSERVATIONS            SAR RES.  2        RUN 2

20    1830     1850  293 V   1850 198 V   1850 208 R   0   0   0   0   0   0   0   0   30  7   0  0  4
20    1845     1650  311 R    950 186 R   2050 206 R   0   0   0   0   0   0   0   0   25  6   0  0  4
20    1900     1600  344 R    850 165 R   2300 201 R   0   0   0   0   0   0   0   0   20  5   0  0  4
20    1915     2000  357 R    800 140 R   2450 197 R   0   0   0   0   0   0   0   0   30  6   0  0  4
20    1930     2200   13 R   1100 121 R   2650 189 R   0   0   0   0   0   0   0   0   40  6   0  0  4
20    1945     2400   25 R   1550 119 R   3150 185 R   0   0   0   0   0   0   0   0   50  8   0  0  4
20    2000     2700   34 R   1850 119 R   3500 184 R   0   0   0   0   0   0   0   0   50  6   0  0  4
20    2015     3150   44 R   2250 118 R   3900 183 R   0   0   0   0   0   0   0   0   40  6   0  0  4
20    2030     3550   50 R   2550 117 R   4200 183 R   0   0   0   0   0   0   0   0   45  6   0  0  4

             29 OBSERVATIONS            SAR RES.  2        RUN 3

21    1530     5430  200 R   3200  34 V   1500  31 V   0   0   0   0   0   0   0   0   32  4   0  0  4
21    1545     5500  203 R   3450  33 R   1450  29 R   0   0   0   0   0   0   0   0   20  4   0  0  4
21    1600     5450  206 R   3800  34 R   1500  31 R   0   0   0   0   0   0   0   0   30  3   0  0  4
21    1615     5350  208 R   4050  37 R   1550  33 R   0   0   0   0   0   0   0   0   30  2   0  0  4
21    1630     5200  210 R   4350  38 R   1600  33 R   0   0   0   0   0   0   0   0   40  2   0  0  4
21    1645     5000  211 R   4700  40 R   1650  35 R   0   0   0   0   0   0   0   0   30  2   0  0  4
21    1700     4700  213 R   4950  42 R   1700  36 R   0   0   0   0   0   0   0   0   40  3   0  0  4
21    1715     4250  216 R   5200  43 R   1750  33 R   0   0   0   0   0   0   0   0   25  2   0  0  4
21    1730     3900  219 R   5450  44 R   1750  33 R   0   0   0   0   0   0   0   0   30  3   0  0  4
21    1745     3500  222 R   5700  45 R   1750  31 R   0   0   0   0   0   0   0   0   30  2   0  0  4
21    1800     3050  226 R   5450  46 R   1750  31 R   0   0   0   0   0   0   0   0   30  3   0  0  4
21    1815     2550  233 R      0 999     1750  29 R   0   0   0   0   0   0   0   0   30  3   0  0  4
21    1830        0    0        0 999        0   0     0   0   0   0   0   0   0   0    0  0   0  0  0
21    1845     5250  231 R   2900  51 R   1950 237 R   0   0   0   0   0   0   0   0    0  0   0  0  4
21    1900     4700  232 R   3150  51 R   1950 233 R   0   0   0   0   0   0   0   0    0  0   0  0  4
21    1915     4050  232 R   3350  57 R   1950 231 R   0   0   0   0   0   0   0   0   20  3   0  0  4
21    1930     3550  232 R   3600  60 R   1850 229 R   0   0   0   0   0   0   0   0    0  0   0  0  4
21    1945     2800  230 R   3900  63 R   1800 225 R   0   0   0   0   0   0   0   0    0  0   0  0  4
21    2000     2300  226 R   4100  67 R   1850 219 R   0   0   0   0   0   0   0   0    0  0   0  0  4
21    2015     1850  220 R   4300  69 R   1850 214 R   0   0   0   0   0   0   0   0    0  0   0  0  4
21    2030     1350  207 R   4600  72 R   1900 209 R   0   0   0   0   0   0   0   0    0  0   0  0  4
21    2045     2900  262 R   2700  42 R   3750 254 R   0   0   0   0   0   0   0   0    0  0   0  0  4
21    2100     2400  266 R   2800  44 R   3650 253 R   0   0   0   0   0   0   0   0    0  0   0  0  4
21    2115     1950  267 R   2950  48 R   3600 252 R   0   0   0   0   0   0   0   0    0  0   0  0  4
21    2130     1350  268 R   3200  52 R   3400 251 R   0   0   0   0   0   0   0   0    0  0   0  0  4
21    2145      950  319 R   4350  46 R   2750 266 R   0   0   0   0   0   0   0   0    0  0   0  0  4
21    2200      650   23 R   4750  52 R   2050 261 R   0   0   0   0   0   0   0   0    0  0   0  0  4
21    2215     4900   58 R    850  63 R   1850 254 R   0   0   0   0   0   0   0   0    0  0   0  0  4
21    2230     3400   74 R   7100  63 R      0 999 A   0   0   0   0   0   0   0   0    0  0   0  0  4

             22 OBSERVATIONS            SAR RES.  2        RUN 4

22    1200     3350   82 R   1000 128 R    500 118 R   0   0   0   0   0   0   0   0  264  4   0  0  4
22    1215     3500   95 R    760 139 R    700 118 R   0   0   0   0   0   0   0   0  255  4   0  0  4
22    1230     3600  106 R    800 151 R    710 118 R   0   0   0   0   0   0   0   0  245  5   0  0  4
22    1245     3860  120 R    900 162 R    800 120 R   0   0   0   0   0   0   0   0  255  6   0  0  4
22    1300     1750  152 R   2300 275 R   1960 294 R   0   0   0   0   0   0   0   0  240  8   0  0  4
22    1315     1960  165 R   2420 282 R   1910 305 R   0   0   0   0   0   0   0   0  240  4   0  0  4
22    1330     2680  174 R   2510 280 R   1940 309 R   0   0   0   0   0   0   0   0  233  7   0  0  4
22    1345     3510  181 R   2620 278 R   1890 316 R   0   0   0   0   0   0   0   0  240  6   0  0  4
22    1400     4350  186 R   2730 276 R   1820 318 R   0   0   0   0   0   0   0   0  250  7   0  0  4
22    1415     5260  191 R   2960 274 R   1755 320 R   0   0   0   0   0   0   0   0  250  8   0  0  4
22    1430     6150  194 R   3045 271 R   1615 322 R   0   0   0   0   0   0   0   0  250  6   0  0  4
22    1445     4415  190 R   2950 318 R   3620   2 R   0   0   0   0   0   0   0   0  255  8   0  0  4
22    1500     4850  191 R   2800 324 R   3870  10 R   0   0   0   0   0   0   0   0  240  9   0  0  4
22    1515     5650  192 R   2515 324 R   3820 165 R   0   0   0   0   0   0   0   0  235  9   0  0  4
22    1530     6450  194 R   2240 324 R   3825  23 R   0   0   0   0   0   0   0   0  225 10   0  0  4
```

```
NOTE1***  THE FIGURES 999 IN THE DROGUE OR DRIFT OBJECT BEARING IS A SPECIAL
          CODE USED IN SOME CASES DURING DATA PROCESSING TO INDICATE MISSING DATA.          **ABBREVIATIONS**

NOTE2***  WIND DATA CODE EXPLAINATION**                                                     WDC= WIND DATA CODE
       0= RELATIVE WIND RECORDED IN DEGREES TRUE                                            CD1= CURRENT DROGUE 1
       1= RELATIVE WIND RECORDED RELATIVE TO SHIP HEAD                                      CD2= CURRENT DROGUE 2
       2= QUESTIONABLE WIND DATA                                                            HOW= HOW BEARINGS WERE OBTAINED
       3= NO WIND DATA RECORDED                                                               R= RADAR
       4= WIND RECORDED IN DEGREES TRUE                                                       V= VISUAL
                                                                                              A= ALONGSIDE

                             H              H     7-MAN     H                H                H                  H               H    REL.         W
                REFERENCE    O     CD-1     O     RAFT      O  16FT BOAT     O  18FT BOAT     O   30FT BOAT      O    CD-2       O    WIND   SHIP   D
DAY  TIME(Z)   RANGE  BRG    W  RANGE BRG   W  RANGE BRG    W  RANGE  BRG    W  RANGE  BRG    W  RANGE  BRG      W  RANGE BRG   W  DIR SPD CRS SPD C

22    1545      7200  195    R   2000 323   R   3900  31    R    0     0          0     0          0     0              0   0      230 10   0   0  4
22    1600      7850  198    R   1750 319   R   3850  37    R    0     0          0     0          0     0              0   0      225 10   0   0  4
22    1615      8450  200    R   1550 310   R   3850  44    R    0     0          0     0          0     0              0   0      230 10   0   0  4
22    1630      8950  202    R   1350 301   R   3950  50    R    0     0          0     0          0     0              0   0      235  9   0   0  4
22    1700      7400  340    R      0   0       1550 327    R    0     0          0     0          0     0              0   0      225 16   0   0  4
22    1715      7400  314    R   1150 314   R   1300  16    R    0     0          0     0          0     0              0   0      235 14   0   0  4
22    1730      7600  339    R   1000 303   R   1350  35    R    0     0          0     0          0     0              0   0      240 12   0   0  4
```

NOTE1*** THE FIGURES 999 IN THE DROGUE OR DRIFT OBJECT BEARING IS A SPECIAL
CODE USED IN SOME CASES DURING DATA PROCESSING TO INDICATE MISSING DATA.

NOTE2*** WIND DATA CODE EXPLAINATION**
0= RELATIVE WIND RECORDED IN DEGREES TRUE
1= RELATIVE WIND RECORDED RELATIVE TO SHIP HEAD
2= QUESTIONABLE WIND DATA
3= NO WIND DATA RECORDED
4= WIND RECORDED IN DEGREES TRUE

ABREVIATIONS

WDC= WIND DATA CODE
CD1= CURRENT DROGUE 1
CD2= CURRENT DROGUE 2
HOW= HOW BEARINGS WERE OBTAINED
R= RADAR
V= VISUAL
A= ALONGSIDE

DAY	TIME(Z)	REFERENCE		HOW	CD-1		HOW	7-MAN RAFT		HOW	16FT BOAT		HOW	18FT BOAT		HOW	30FT BOAT		HOW	CD-2		HOW	REL. WIND		SHIP		WDC
		RANGE	BRG		RANGE	BRG		RANGE	BRG		RANGE	BRG		RANGE	BRG		RANGE	BRG		RANGE	BRG		DIR	SPD	CRS	SPD	
		147 OBSERVATIONS			ROMEXL 5/69						RUN 1																
11	1450	11750	260	R	3570	332	R	3920	324	R	0	0		0	0		0	0		0	0		340	10	110	0	1
11	1510	14060	258	R	4050	323	R	4575	312	R	0	0		0	0		0	0		0	0		360	10	70	0	1
11	1530	11250	260	R	3415	344	R	4000	322	R	0	0		0	0		0	0		0	0		350	2	270	6	1
11	1550	8210	255	R	3210	24	R	2710	332	R	0	0		0	0		0	0		0	0		340	8	330	0	2
11	1610	8510	249	R	2710	25	R	2320	341	R	0	0		0	0		0	0		0	0		360	14	75	0	1
11	1630	8750	248	R	2470	19	R	2500	324	R	0	0		0	0		0	0		0	0		360	10	77	1	1
11	1650	8960	248	R	2280	15	R	2870	312	R	0	0		0	0		0	0		0	0		360	10	85	0	1
11	1710	10500	238	R	0	0		3030	270	R	0	0		0	0		0	0		0	0		20	10	50	6	1
11	1730	10750	238	R	0	0		3325	270	R	0	0		0	0		0	0		0	0		350	9	105	0	1
11	1750	11150	239	R	0	0		4550	268	R	0	0		0	0		0	0		0	0		360	9	70	0	1
11	1810	10820	239	R	0	0		4770	268	R	0	0		0	0		0	0		0	0		30	8	327	0	1
11	1830	10680	239	R	0	0		5149	269	R	0	0		0	0		0	0		0	0		25	10	318	0	1
11	1850	10210	242	R	0	0		5210	269	R	0	0		0	0		0	0		0	0		360	8	88	0	1
11	1910	7050	242	R	3510	62	R	3065	302	R	0	0		0	0		0	0		0	0		330	7	237	10	1
11	1930	3925	228	R	5210	62	R	2800	350	R	0	0		0	0		0	0		0	0		45	8	358	0	1
11	1950	3710	219	R	6560	67	R	2610	352	R	0	0		0	0		0	0		0	0		40	7	347	0	1
11	2010	3540	213	R	6710	69	R	2430	353	R	0	0		0	0		0	0		0	0		45	8	339	0	1
11	2030	3480	205	R	6970	72	R	2260	252	R	0	0		0	0		0	0		0	0		45	6	340	0	1
11	2050	3470	196	R	7240	74	R	2085	354	R	0	0		0	0		0	0		0	0		45	6	347	0	1
11	2110	3600	189	R	7480	76	R	1760	357	R	0	0		0	0		0	0		0	0		30	7	359	0	1
11	2130	3650	182	R	7746	77	R	1600	360	R	0	0		0	0		0	0		0	0		30	8	340	0	1
11	2150	3775	177	R	8040	79	R	1425	6	R	0	0		0	0		0	0		0	0		30	6	335	0	1
11	2210	4080	172	R	8335	80	R	1180	12	R	0	0		0	0		0	0		0	0		30	5	342	0	1
11	2230	4180	165	R	8690	84	R	980	21	R	0	0		0	0		0	0		0	0		30	5	337	0	1
11	2250	6706	216	R	3600	94	R	5070	269	R	0	0		0	0		0	0		0	0		30	10	352	2	1
11	2310	6520	209	R	4400	99	R	4640	264	R	0	0		0	0		0	0		0	0		20	5	320	0	2
11	2330	6460	202	R	5000	100	R	4450	261	R	0	0		0	0		0	0		0	0		90	5	330	0	1
11	2350	6560	196	R	5590	101	R	4435	255	R	0	0		0	0		0	0		0	0		90	6	338	0	1
12	10	6655	191	R	6075	102	R	4325	253	R	0	0		0	0		0	0		0	0		80	7	332	0	1
12	30	6775	188	R	6460	103	R	4300	251	R	0	0		0	0		0	0		0	0		85	6	336	0	1
12	50	6950	184	R	6860	104	R	4300	246	R	0	0		0	0		0	0		0	0		90	6	331	0	1
12	110	7050	180	R	7150	104	R	4180	243	R	0	0		0	0		0	0		0	0		85	8	334	0	1
12	130	7345	177	R	7653	105	R	4340	239	R	0	0		0	0		0	0		0	0		85	6	329	0	1
12	150	7672	174	R	7950	107	R	4427	236	R	0	0		0	0		0	0		0	0		90	7	334	0	1
12	210	7950	171	R	8400	108	R	4450	234	R	0	0		0	0		0	0		0	0		85	6	340	0	1
12	230	8250	169	R	8800	108	R	4400	231	R	0	0		0	0		0	0		0	0		90	7	339	6	1
12	250	8600	165	R	9050	109	R	4500	229	R	0	0		0	0		0	0		0	0		90	7	334	0	1
12	310	8750	161	R	9550	108	R	4400	228	R	0	0		0	0		0	0		0	0		90	5	334	0	1
12	330	6700	177	R	7200	103	R	5400	256	R	0	0		0	0		0	0		0	0		0	10	100	5	1
12	350	6500	192	R	5210	105	R	7520	259	R	0	0		0	0		0	0		0	0		250	8	87	0	2
12	410	6200	192	R	5270	104	R	7550	260	R	0	0		0	0		0	0		0	0		260	5	144	0	1
12	430	6080	191	R	5440	103	R	7470	259	R	0	0		0	0		0	0		0	0		180	7	159	0	2
12	450	5780	190	R	5400	101	R	7270	261	R	0	0		0	0		0	0		0	0		185	7	184	0	1
12	510	5350	188	R	5370	98	R	7000	262	R	0	0		0	0		0	0		0	0		190	6	145	0	2
12	530	5040	188	R	5430	95	R	6900	263	R	0	0		0	0		0	0		0	0		230	6	151	0	1

(continued)

```
12   550    4660 185 R   5550  92 R   6630 265 R   0  0    0  0    0  0    0  0   250 10 140  0 1
12   610    4315 193 R   5780  91 R   6480 268 R   0  0    0  0    0  0    0  0   270  8 146  0 1
12   630    3900 178 R   6050  89 R   6160 271 R   0  0    0  0    0  0    0  0   270  8 157  0 1
12   650    3560 172 R   6320  86 R   6030 273 R   0  0    0  0    0  0    0  0   260  8 142  0 1
12   710    3280 167 R   6520  84 R   6050 275 R   0  0    0  0    0  0    0  0   340  5 166  6 1
12   730    3500 160 R   6730  88 R   5920 269 R   0  0    0  0    0  0    0  0    50 12  13  5 1
12   750    5947 177 R   6270 111 R   7450 249 R   0  0    0  0    0  0    0  0   292 10 158  6 1
12   810    5420 175 R   6280 109 R   7220 250 R   0  0    0  0    0  0    0  0   261 10 189  0 1
12   830    4930 169 R   6390 105 R   7080 251 R   0  0    0  0    0  0    0  0   270  9 190  0 1
12   850    4530 163 R   6500 101 R   6920 256 R   0  0    0  0    0  0    0  0   238 10 207  0 1
12   910    4330 156 R   6750  99 R   6710 259 R   0  0    0  0    0  0    0  0   238 10 237  0 1
12   930    4180 146 R   7210  96 R   6510 263 R   0  0    0  0    0  0    0  0   270  8 201  0 1
12   950    4200 138 R   7500  94 R   6380 267 R   0  0    0  0    0  0    0  0   270 10 230  0 1
12  1010    4330 128 R   7820  92 R   6240 273 R   0  0    0  0    0  0    0  0   270 10 199  0 1
12  1030    4550 120 R   8080  91 R   6170 275 R   0  0    0  0    0  0    0  0   270 10 235  0 1
12  1050    4850 113 R   8490  89 R   6130 280 R   0  0    0  0    0  0    0  0   270  8 233  0 1
12  1110    5380 107 R   8826  89 R   6140 285 R   0  0    0  0    0  0    0  0   270 12 217  0 1
12  1130    5550 104 R   9230  89 R   6030 287 R   0  0    0  0    0  0    0  0   270 10 200  0 1
12  1150    6500  99 R   9675  88 R   6110 291 R   0  0    0  0    0  0    0  0   275  5 197  0 1
12  1210    7280  95 R  10210  88 R   6260 297 R   0  0    0  0    0  0    0  0   280 10 193  0 1
12  1230    7760  94 R  10540  88 R   6320 299 R   0  0    0  0    0  0    0  0   255 10 218  0 1
12  1250    8380  93 R  10990  89 R   6300 301 R   0  0    0  0    0  0    0  0   250 10 232  0 1
12  1310    8770  94 R  11290  91 R   6320 300 R   0  0    0  0    0  0    0  0   250 10 225  0 1
12  1330    9570  92 R  11700  96 R   6310 302 R   0  0    0  0    0  0    0  0   280 10 194  0 1
12  1350   10190  91 R  12090  90 R   6430 305 R   0  0    0  0    0  0    0  0   270 10 188  0 1
12  1410   10850  90 R  12470  90 R   6460 308 R   0  0    0  0    0  0    0  0   275  9 188  0 1
12  1430   11400  90 R  12800  91 R   6480 309 R   0  0    0  0    0  0    0  0   255  9 221  0 1
12  1455   12410  90 R  13250  92 R   6300 313 R   0  0    0  0    0  0    0  0   240 10 226  0 1
12  1510   12850  89 R  13490  92 R   6250 311 R   0  0    0  0    0  0    0  0   260 10 188  0 1
12  1530   13310  89 R  13900  93 R   6230 311 R   0  0    0  0    0  0    0  0   270  8 199  0 1
12  1550   13930  90 R  14100  93 R   6150 313 R   0  0    0  0    0  0    0  0   240  9 220  0 1
12  1610   16200  96 R  16200  99 R   2930 323 R   0  0    0  0    0  0    0  0    80  6 315 10 1
12  1630   19900 102 R      0   0         0   0     0  0    0  0    0  0    0  0   360 12  60 10 1
12  1650   13200 102 R  13050 107 R      0   0     0  0    0  0    0  0    0  0   360 18 105 10 1
12  1710    7600 101 R   7200 112 R      0   0     0  0    0  0    0  0    0  0   360 20 105 10 1
12  1730    2025  60 R   1000 115 R      0   0     0  0    0  0    0  0    0  0   360 21 115 10 1
12  1750    3690 297 R   4625 274 R      0   0     0  0    0  0    0  0    0  0     5 20  95 10 1
12  1810    8580 292 R      0   0         0   0     0  0    0  0    0  0    0  0   360 21  95 10 1
12  1920   11600 268 R  14050 261 R   6000 107 R   0  0    0  0    0  0    0  0   280 10 183  0 1
12  1930   11335 268 R  13960 261 R   6085 107 R   0  0    0  0    0  0    0  0   270 10 215  0 1
12  1950   10360 270 R  13280 260 R   6250 103 R   0  0    0  0    0  0    0  0   270  9 210  0 1
12  2010    9465 269 R  12760 260 R   6410  98 R   0  0    0  0    0  0    0  0   270  9 235  0 1
12  2030    8620 270 R  12210 260 R   6600  95 R   0  0    0  0    0  0    0  0   270  8 210  0 1
12  2050    7970 271 R  11740 259 R   6735  93 R   0  0    0  0    0  0    0  0   275  8 207  0 1
12  2110    7130 273 R  11275 260 R   6880  90 R   0  0    0  0    0  0    0  0   270  7 202  0 1
12  2130    6550 275 R  10950 258 R   6980  88 R   0  0    0  0    0  0    0  0   270  8 215  0 1
12  2150    5710 277 R  10500 258 R   7070  85 R   0  0    0  0    0  0    0  0   270  7 195  0 1
12  2210    4980 280 R  10070 258 R   7190  83 R   0  0    0  0    0  0    0  0   270  8 135  0 1
12  2230    4390 284 R   9790 259 R   7210  81 R   0  0    0  0    0  0    0  0   250  9 185  0 1
12  2250    3700 287 R   9310 258 R   7290  79 R   0  0    0  0    0  0    0  0   265 10 190  0 1
12  2310    3750 308 R   8900 266 R   7680  67 R   0  0    0  0    0  0    0  0   280 10 185  2 1
12  2330    4900 327 R   8720 278 R   8540  57 R   0  0    0  0    0  0    0  0   270 10 155  0 1
12  2350    4890 336 R   8440 279 R   8750  54 R   0  0    0  0    0  0    0  0   270 10 191  0 1
13    10    4720 344 R   8150 281 R   8970  54 R   0  0    0  0    0  0    0  0   265  9 135  0 1
13    30    4690 351 R   7900 283 R   9220  53 R   0  0    0  0    0  0    0  0   270  9 191  0 1
13    50    4640 356 R   7630 283 R   9360  53 R   0  0    0  0    0  0    0  0   265  9 132  0 1
13   110    4390   7 R   7285 284 R   9560  53 R   0  0    0  0    0  0    0  0   270 10 178  0 1
```

NOTE1*** THE FIGURES 999 IN THE DROGUE OR DRIFT OBJECT BEARING IS A SPECIAL CODE USED IN SOME CASES DURING DATA PROCESSING TO INDICATE MISSING DATA.

NOTE2*** WIND DATA CODE EXPLAINATION**
0= RELATIVE WIND RECORDED IN DEGREES TRUE
1= RELATIVE WIND RECORDED RELATIVE TO SHIP HEAD
2= QUESTIONABLE WIND DATA
3= NO WIND DATA RECORDED
4= WIND RECORDED IN DEGREES TRUE

ABBREVIATIONS

WDC= WIND DATA CODE
CD1= CURRENT DROGUE 1
CD2= CURRENT DROGUE 2
HOW= HOW BEARINGS WERE OBTAINED
R= RADAR
V= VISUAL
A= ALONGSIDE

		REFERENCE		H O	CD-1		H O	7-MAN RAFT		H O	16FT BOAT		H O	18FT BOAT		H O	30FT BOAT		H O	CO-2		H O	REL. WIND		SHIP		W D
DAY	TIME(Z)	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	DIR	SPD	CRS	SPD	C
13	130	4810	13	R	7980	285	R	9620	52	R	0	0		0	0		0	0		0	0		265	9	188	0	1
13	150	5800	18	R	6880	286	R	9780	50	R	0	0		0	0		0	0		0	0		260	9	172	0	1
13	210	5340	22	R	6630	289	R	10000	50	R	0	0		0	0		0	0		0	0		275	11	205	0	1
13	230	3340	328	R	10710	271	R	5720	33	R	0	0		0	0		0	0		0	0		280	9	194	0	1
13	250	3600	341	R	10550	275	R	6260	31	R	0	0		0	0		0	0		0	0		270	9	191	0	1
13	310	3580	350	R	10240	278	R	6560	30	R	0	0		0	0		0	0		0	0		265	8	195	0	1
13	330	3580	354	R	9970	279	R	6930	29	R	0	0		0	0		0	0		0	0		270	9	193	0	1
13	350	3710	4	R	9660	280	R	7400	29	R	0	0		0	0		0	0		0	0		270	9	193	0	1
13	410	3870	13	R	9370	282	R	7810	29	R	0	0		0	0		0	0		0	0		265	9	194	0	1
13	430	4140	21	R	9030	284	R	8230	28	R	0	0		0	0		0	0		0	0		270	10	196	0	1
13	450	4470	26	R	8740	287	R	8690	28	R	0	0		0	0		0	0		0	0		275	10	193	0	1
13	510	4670	33	R	8470	289	R	9060	28	R	0	0		0	0		0	0		0	0		310	9	198	0	1
13	530	5100	35	R	8310	292	R	9460	28	R	0	0		0	0		0	0		0	0		270	12	196	0	1
13	550	5440	39	R	8030	296	R	9960	27	R	0	0		0	0		0	0		0	0		270	10	193	0	1
13	610	5850	42	R	7950	298	R	10460	28	R	0	0		0	0		0	0		0	0		345	11	180	0	1
13	630	6190	43	R	7360	301	R	10730	27	R	0	0		0	0		0	0		0	0		280	9	231	0	1
13	710	4870	137	R	8650	243	R	3790	59	R	0	0		0	0		0	0		0	0		85	8	59	0	1
13	730	4960	143	R	9210	245	R	3520	57	R	0	0		0	0		0	0		0	0		350	10	154	0	1
13	750	5340	140	R	8890	244	R	3775	56	R	0	0		0	0		0	0		0	0		275	9	222	0	1
13	810	5650	137	R	8470	244	R	4210	55	R	0	0		0	0		0	0		0	0		270	5	220	0	1
13	830	5810	134	R	8020	244	R	4610	54	R	0	0		0	0		0	0		0	0		270	7	237	0	1
13	850	5940	131	R	7630	245	R	4910	52	R	0	0		0	0		0	0		0	0		270	8	239	0	1
13	910	6180	128	R	7270	245	R	5280	50	R	0	0		0	0		0	0		0	0		270	9	236	0	1
13	930	6370	126	R	6960	245	R	5610	48	R	0	0		0	0		0	0		0	0		270	10	198	0	1
13	950	6570	124	R	6590	246	R	5890	47	R	0	0		0	0		0	0		0	0		270	10	195	0	1
13	1010	6790	120	R	6220	247	R	6260	47	R	0	0		0	0		0	0		0	0		270	11	200	0	1
13	1030	7020	119	R	5810	248	R	6600	46	R	0	0		0	0		0	0		0	0		270	10	231	0	1
13	1050	7400	119	R	5490	246	R	6820	46	R	0	0		0	0		0	0		0	0		270	9	202	0	1
13	1110	7770	117	R	5140	246	R	7090	47	R	0	0		0	0		0	0		0	0		265	11	219	0	1
13	1130	8170	118	R	4760	244	R	7280	47	R	0	0		0	0		0	0		0	0		265	11	284	0	1
13	1150	8520	117	R	4480	241	R	7325	49	R	0	0		0	0		0	0		0	0		260	11	232	0	1
13	1210	8850	116	R	3920	239	R	7640	51	R	0	0		0	0		0	0		0	0		275	11	196	0	1
13	1230	9300	114	R	3500	239	R	7870	50	R	0	0		0	0		0	0		0	0		260	12	199	0	1
13	1250	9760	113	R	2910	236	R	8140	50	R	0	0		0	0		0	0		0	0		260	15	191	0	1
13	1310	7810	112	R	4470	258	R	7370	34	R	0	0		0	0		0	0		0	0		360	30	133	12	1
13	1330	2070	190	R	0	0		7980	332	R	0	0		0	0		0	0		0	0		360	30	130	12	1
13	1340	2230	192	R	12780	269	R	8000	334	R	0	0		0	0		0	0		0	0		90	10	10	0	1
13	1350	4800	235	R	0	0		9940	314	R	0	0		0	0		0	0		0	0		360	28	95	12	1
13	1410	8820	258	R	0	0		14960	301	R	0	0		0	0		0	0		0	0		330	16	154	2	1
13	1430	8230	250	R	0	0		0	0		0	0		0	0		0	0		0	0		270	10	195	0	1
13	1450	7670	256	R	0	0		14830	304	R	0	0		0	0		0	0		0	0		270	10	195	0	1
13	1510	8530	269	R	0	0		15830	304	R	0	0		0	0		0	0		0	0		90	4	304	12	1
13	1530	6100	192	R	13130	257	R	8150	303	R	0	0		0	0		0	0		0	0		30	4	304	12	1
13	1550	9870	158	R	10230	234	R	2700	299	R	0	0		0	0		0	0		0	0		150	9	335	5	1
13	1610	11340	153	R	9670	223	R	1180	292	R	0	0		0	0		0	0		0	0		130	9	332	5	1

(continued)

```
          57 OBSERVATIONS              BOMEXL 5/69        RUN 2

13   1910    7060  294 R    4970  85 R    4225  88 R    0   0     0   0     0   0     0   0    270 10  190  0  1
13   1930    3330  298 R    5410  82 R    7310  43 R    0   0     0   0     0   0     0   0    270  8  190  0  1
13   1950    6400  302 R    5890  79 R    4360  79 R    0   0     0   0     0   0     0   0    270  8  190  0  1
13   2016    7970  309 R    5280  65 R    3510  59 R    0   0     0   0     0   0     0   0    170  7  275  5  1
13   2030    7025  304 R    5530  71 R    3660  61 R    0   0     0   0     0   0     0   0    290 17  150  5  1
13   2050    6190  310 R    6070  76 R    3430  68 R    0   0     0   0     0   0     0   0    270 17  892  0  1
13   2056    6190  310 R    6070  76 R    3430  68 R    0   0     0   0     0   0     0   0    270 17  892  0  1
13   2120    6380  314 R    5915  75 R    3200  60 R    0   0     0   0     0   0     0   0    270 11  185  0  1
13   2130    6610  317 R    6430  71 R    3575  56 R    0   0     0   0     0   0     0   0    270 10  192  0  1
13   2150    6730  323 R    6940  69 R    3950  52 R    0   0     0   0     0   0     0   0    270 11  190  0  1
13   2210    6765  328 R    7470  67 R    4440  49 R    0   0     0   0     0   0     0   0    270 12  198  0  1
13   2230    6800  333 R    7900  67 R    4750  48 R    0   0     0   0     0   0     0   0    270 11  198  0  1
13   2250    6960  337 R    8410  67 R    5070  47 R    0   0     0   0     0   0     0   0    270 11  190  0  1
13   2310    7140  342 R    8990  66 R    5150  41 R    0   0     0   0     0   0     0   0    270 11  195  0  1
13   2330    7300  347 R    9400  67 R    5650  46 R    0   0     0   0     0   0     0   0    240 11  220  0  1
13   2350    7730  349 R    9910  66 R    5980  43 R    0   0     0   0     0   0     0   0    260 10  191  0  1
14     10    7980  353 R   10510  66 R    6305  43 R    0   0     0   0     0   0     0   0    265 10  181  0  1
14     50   10230  315 R    4230  44 R    4620 321 R    0   0     0   0     0   0     0   0    270 11  188  0  1
14    110   10140  320 R    4800  46 R    4770 326 R    0   0     0   0     0   0     0   0    265 11  194  0  1
14    130    9960  325 R    5350  45 R    4880 330 R    0   0     0   0     0   0     0   0    270 10  199  0  1
14    150    9900  328 R    5920  50 R    5080 334 R    0   0     0   0     0   0     0   0    260 10  194  0  1
14    210    9910  333 R    6540  51 R    5225 338 R    0   0     0   0     0   0     0   0    365 11  187  0  2
14    230   10020  336 R    6940  51 R    5330 340 R    0   0     0   0     0   0     0   0    260 12  195  0  1
14    250   10085  341 R    7465  53 R    5500 343 R    0   0     0   0     0   0     0   0    260 11  197  0  1
14    310   10155  346 R    7900  54 R    5630 348 R    0   0     0   0     0   0     0   0    265  9  190  0  1
14    330   10390  348 R    8190  53 R    5835 349 R    0   0     0   0     0   0     0   0    245  9  198  0  1
14    350   10670  351 R    8490  53 R    5975 349 R    0   0     0   0     0   0     0   0    255 10  197  0  1
14    410   11210  355 R    8900  53 R    6440 353 R    0   0     0   0     0   0     0   0    270 11  154  0  1
14    430   11610  356 R    9190  52 R    6725 352 R    0   0     0   0     0   0     0   0     30 12   50  0  1
14    450    9220  346 R    6620  63 R    4710 325 R    0   0     0   0     0   0     0   0     60 16   36  6  1
14    510    7400  332 R    3770  87 R    4730 287 R    0   0     0   0     0   0     0   0    315 16  140  0  1
14    530    7410  334 R    3790  83 R    4900 289 R    0   0     0   0     0   0     0   0    265 10  186  0  1
14    560    7520  340 R    4130  84 R    4790 292 R    0   0     0   0     0   0     0   0    265 10  184  0  1
14    610    7690  344 R    4560  81 R    4700 295 R    0   0     0   0     0   0     0   0    275 10  179  0  1
14    650    8290  353 R    5160  77 R    4650 302 R    0   0     0   0     0   0     0   0    260 11  188  0  1
14    710    8670  357 R    5420  75 R    4620 305 R    0   0     0   0     0   0     0   0    265 10  132  0  1
14    730    9090  360 R    5730  73 R    4640 308 R    0   0     0   0     0   0     0   0    265 10  184  0  1
14    750    9455    3 R    5990  71 R    4560 311 R    0   0     0   0     0   0     0   0    275 10  161  0  1
14    810    9950    7 R    6240  69 R    4575 314 R    0   0     0   0     0   0     0   0    265 10  173  0  1
14    830   10410   10 R     460  69 R    4510 314 R    0   0     0   0     0   0     0   0    255  9  172  0  1
14    850   10950   12 R    6810  68 R    4520 316 R    0   0     0   0     0   0     0   0    260  9  179  0  1
14    910   11470   15 R    7100  67 R    4510 317 R    0   0     0   0     0   0     0   0    260  9  177  0  1
14    930   12080   17 R    7465  67 R    4520 319 R    0   0     0   0     0   0     0   0    265 10  173  0  1
14    950   12600   19 R    7810  67 R    4460 319 R    0   0     0   0     0   0     0   0    260 10  170  0  1
14   1010   10810   17 R    5890  76 R    4715 293 R    0   0     0   0     0   0     0   0    360 24   41  8  1
14   1030    5710    6 R    4360 142 R    8650 246 R    0   0     0   0     0   0     0   0    360 23   30  2  1
14   1050    5100  360 R    4560 159 R    9830 246 R    0   0     0   0     0   0     0   0    225 11  210  0  1
14   1110    5600    7 R    4500 153 R    9760 245 R    0   0     0   0     0   0     0   0    265 10  164  0  1
14   1130    6290   13 R    4460 149 R    9660 244 R    0   0     0   0     0   0     0   0    270 11  158  0  1
14   1150    6890   17 R    4390 145 R    9530 244 R    0   0     0   0     0   0     0   0    270 15  165  0  1
14   1210    7570   21 R    4370 139 R    9300 245 R    0   0     0   0     0   0     0   0    270 17  164  0  1
14   1230    8430   24 R    4420 132 R    9320 245 R    0   0     0   0     0   0     0   0    270 17  164  0  1
14   1250    9380   27 R    4500 134 R    9225 246 R    0   0     0   0     0   0     0   0    260 20  172  0  1
14   1310   10560   29 R    4740 116 R    9120 248 R    0   0     0   0     0   0     0   0    275 17  150  0  1
14   1330   11300   31 R    4940 112 R    9040 249 R    0   0     0   0     0   0     0   0    265 18  160  0  1
14   1350   12390   33 R    4930 109 R    8900 251 R    0   0     0   0     0   0     0   0    270 16  158  0  1
14   1410   16350   43 R       0   0      4920 257 R    0   0     0   0     0   0     0   0    195 13  260 10  1
```

```
NOTE1***  THE FIGURES 999 IN THE DROGUE OR DRIFT OBJECT BEARING IS A SPECIAL
          CODE USED IN SOME CASES DURING DATA PROCESSING TO INDICATE MISSING DATA.                **ABREVIATIONS**

NOTE2***  WIND DATA CODE EXPLAINATION**                                                          WDC= WIND DATA CODE
       0= RELATIVE WIND RECORDED IN DEGREES TRUE                                                 CD1= CURRENT DROGUE 1
       1= RELATIVE WIND RECORDED RELATIVE TO SHIP HEAD                                           CD2= CURRENT DROGUE 2
       2= QUESTIONABLE WIND DATA                                                                 HOW= HOW BEARINGS WERE OBTAINED
       3= NO WIND DATA RECORDED                                                                    R= RADAR
       4= WIND RECORDED IN DEGREES TRUE                                                            V= VISUAL
                                                                                                   A= ALONGSIDE

                                 H              H     7-MAN   H               H               H               H               H    REL.          W
                    REFERENCE    O      CD-1    O     RAFT    O   16FT BOAT   O   18FT BOAT   O   34FT BOAT   O     CD-2      O    WIND    SHIP   D
DAY  TIME(Z)      RANGE  BRG W    RANGE  BRG W   RANGE BRG W   RANGE  BRG W   RANGE  BRG W   RANGE  BRG W   RANGE  BRG W   DIR SPD CRS SPD C

          61 OBSERVATIONS              BOMFXL 5/69          RUN 3

 14    1920       10790  270 R     3960  89 R    3765 682 R       0     0        0     0        0     0        0     0      290 15  171 60  1
 14    1930       10080  270 R     4520  79 R    4120  82 R       0     0        0     0        0     0        0     0       45 10  339  1  1
 14    1950        8500  268 R     5690  81 R    4750  84 R       0     0        0     0        0     0        0     0      355 21   32  0  1
 14    2010        8360  260 R     5300  89 R    3730  85 R       0     0        0     0        0     0        0     0       30 20   50  1  1
 14    2030        3100  264 R     4900  81 R    3070  86 R       0     0        0     0        0     0        0     0      360 17   80  2  1
 14    2100        7070  263 R     4330  83 R    1700  98 R       0     0        0     0        0     0        0     0      360 24   80  0  1
 14    2115        6060  261 R     3840  81 R    1000  97 R       0     0        0     0        0     0        0     0      350 24  112  0  1
 14    2130        7400  269 R     5330  65 R       0   0         0     0        0     0        0     0        0     0      350 10  224  7  2
 14    2150        5250  303 R     6400  52 R    4580  35 R       0     0        0     0        0     0        0     0      350 24  131  0  1
 14    2210        5050  304 R     8250  48 R    4300  22 R       0     0        0     0        0     0        0     0      350 24   90  0  1
 14    2230        4930  304 R     9000  45 R    3920  14 R       0     0        0     0        0     0        0     0      345 27   88  0  1
 14    2250        4700  305 R     7920  45 R    3560   4 R       0     0        0     0        0     0        0     0      360 27   78  0  1
 14    2310        4410  308 R     8050  44 R    3400 355 R       0     0        0     0        0     0        0     0      360 27   78  0  1
 14    2330        4000  307 R     8010  44 R    3260 343 R       0     0        0     0        0     0        0     0      360 30   75  0  1
 14    2350        3870  308 R     8250  41 R    3580 325 R       0     0        0     0        0     0        0     0      360 20   75  2  1
 15      10        3650  309 R     8150  39 R    3940 318 R       0     0        0     0        0     0        0     0        5 23   73  2  1
 15      30        3460  310 R     8170  37 R    4490 308 R       0     0        0     0        0     0        0     0      360 25   82  2  1
 15      50        3470  307 R     7900  31 R    5980 297 R       0     0        0     0        0     0        0     0      360 28   75  4  1
 15     110        3830  296 R     7150  25 R    7400 288 R       0     0        0     0        0     0        0     0       10 29   76  4  1
 15     130        4170  287 R     6400  26 R    8600 282 R       0     0        0     0        0     0        0     0      360 22   78  3  1
 15     150        2230  257 R     5930  42 R    7910 272 R       0     0        0     0        0     0        0     0      270 14  310  7  2
 15     210        4130  157 R     7310  78 R    6120 235 R       0     0        0     0        0     0        0     0      360 26   72  3  1
 15     230        4550  162 R     6840  78 R    7460 239 R       0     0        0     0        0     0        0     0      360 25   87  4  1
 15     250        4790  166 R     6100  78 R    8660 240 R       0     0        0     0        0     0        0     0      360 22   91  4  1
 15     310        5110  169 R     5160  79 R   10020 243 R       0     0        0     0        0     0        0     0      180 11  250  6  1
 15     330        7330  115 R    10390  74 R    4420 242 R       0     0        0     0        0     0        0     0      180 12  245  0  1
 15     450        5030  146 R     5720  60 R       0   0         0     0        0     0        0     0        0     0      360 32   83  0  1
 15     510        5240  194 R     2420  21 R       0   0         0     0        0     0        0     0        0     0      360 32   97  0  1
 15     530        7790  226 R     4300 297 R       0 999         0     0        0     0        0     0        0     0      360 30   90  0  1
 15     630        8660  232 R     6510 298 R    4700  21 R       0     0        0     0        0     0        0     0      200 17  229  2  1
 15     650        6460  210 R     4720 322 R    6520  79 R       0     0        0     0        0     0        0     0      250 22  214  2  1
 15     710        5500  206 R     4450 334 R    6970  75 R       0     0        0     0        0     0        0     0      300 22  130  4  1
 15     730        6950  220 R     5940 311 R       0   0         0     0        0     0        0     0        0     0      180 10  270  2  1
 15     750        3580  207 R     4360 320 R       0   0         0     0        0     0        0     0        0     0      135 26  296  2  1
 15     810        7320  214 R     5390 311 R       0   0         0     0        0     0        0     0        0     0      360 30   96  2  1
 15     830        9190  219 R     6610 295 R       0   0         0     0        0     0        0     0        0     0      174 23  271  6  1
 15     850        8780  213 R     5000 301 R       0   0         0     0        0     0        0     0        0     0      220 10  245  6  1
 15     910        8600  209 R     5530 304 R       0   0         0     0        0     0        0     0        0     0      170 20  299  6  1
 15     930        8550  205 R     5150 306 R       0   0         0     0        0     0        0     0        0     0      170 25  279  1  1
 15     950        8350  197 R     4650 312 R       0   0         0     0        0     0        0     0        0     0      180 26  274  1  1
 15    1010        8130  194 R     4450 317 R       0   0         0     0        0     0        0     0        0     0      194 22  240  1  1
 15    1030        8530  187 R     3850 322 R       0   0         0     0        0     0        0     0        0     0      170 20  275  1  1
 15    1050        8640  186 R     4000 320 R       0   0         0     0        0     0        0     0        0     0      196 10  252  1  1
```

(continued)

15	1110	8550	178 R	3650	336 R	0	0	0	0	0	0	0	0	0	0	0	225	26	240	1	1
15	1130	8740	177 R	3630	347 R	0	0	0	0	0	0	0	0	0	0	0	190	20	250	1	1
15	1150	8930	179 R	3950	360 R	0	0	0	0	0	0	0	0	0	0	0	190	10	257	1	1
15	1210	8970	166 R	3560	34 R	2900	75 R	0	0	0	0	0	0	0	0		355	24	90	1	1
15	1230	9000	145 R	5500	31 R	2260	68 R	0	0	0	0	0	0	0	0		350	23	90	1	1
15	1250	9000	146 R	5560	29 R	1950	55 R	0	0	0	0	0	0	0	0		350	22	90	1	1
15	1310	7400	154 R	6440	4 R	0	0	0	0	0	0	0	0	0	0		330	25	120	6	1
15	1330	7050	127 R	9700	17 R	4900	2 R	0	0	0	0	0	0	0	0		360	27	90	6	1
15	1350	6000	126 R	9780	13 R	4950	351 R	0	0	0	0	0	0	0	0		350	23	90	2	1
15	1410	6630	126 R	10040	312 R	5225	341 R	0	0	0	0	0	0	0	0		350	22	90	2	1
15	1430	6490	126 R	10270	10 R	5710	335 R	0	0	0	0	0	0	0	0		350	20	93	0	1
15	1450	6470	127 R	10440	8 R	6210	328 R	0	0	0	0	0	0	0	0		345	22	90	0	1
15	1510	6190	129 R	10500	7 R	6840	321 R	0	0	0	0	0	0	0	0		345	23	90	0	1
15	1530	5900	130 R	10810	4 R	7500	315 R	0	0	0	0	0	0	0	0		345	23	95	0	1
15	1550	5740	130 R	11900	3 R	8200	311 R	0	0	0	0	0	0	0	0		350	23	90	1	1
15	1610	5460	131 R	11210	2 R	8970	308 R	0	0	0	0	0	0	0	0		350	23	180	1	1
15	1630	4420	155 R	11375	353 R	10000	301 R	0	0	0	0	0	0	0	0		350	24	90	1	1
15	1650	11915	120 R	9470	30 R	4000	301 R	0	0	0	0	0	0	0	0		90	0	300	12	1

(continued)

```
          143 OBSERVATIONS           ROSAR 1/70       RUN 2
16  1230     0   0      0   0       0   0 A      0   0      0   0     0   0     0   0   120 15  220  0  1
16  1250     0   0      0   0       0   0 A      0   0      0   0     0   0     0   0   120 20  195  0  1
16  1310     0   0      0   0       0   0 A      0   0      0   0     0   0     0   0   170 14  190  0  1
16  1330     0   0      0   0       0   0        0   0      0   0     0   0     0   0   225  7  156 12  1
16  1350     0   0      0   0       0   0        0   0      0   0     0   0     0   0   110 11  210 12  1
16  1410     0   0      0   0       0   0        0   0      0   0     0   0     0   0    80 15  208 12  1
16  1430     0   0      0   0       0   0        0   0      0   0     0   0     0   0   100  7  208 12  1
16  1450     0   0      0   0       0   0        0   0      0   0     0   0     0   0    60 16  210 12  1
16  1510     0   0      0   0       0   0        0   0      0   0     0   0     0   0    95 11  208 12  1
16  1530     0   0      0   0       0   0        0   0      0   0     0   0     0   0    90 11  197 12  1
16  1537     0   0      0   0       0   0     8900 182 R    0   0     0   0     0   0   120  5  195 12  1
16  1543     0   0      0   0       0   0     6900 177 R    0   0     0   0     0   0     0  0    0  0  3
16  1546     0   0      0   0       0   0     5850 178 R    0   0     0   0     0   0     0  0    0  0  3
16  1550     0   0      0   0       0   0     4350 184 R    0   0     0   0     0   0   240  5  155 12  1
16  1610     0   0      0   0       0   0      450 226 R    0   0     0   0     0   0    90 10  235  0  1
16  1630     0   0      0   0       0   0      600 229 R    0   0     0   0     0   0    80 14  255  0  1
16  1650     0   0      0   0       0   0      700 229 R    0   0     0   0     0   0    85 17  255  0  1
16  1710     0   0      0   0       0   0     2050 191 R    0   0     0   0     0   0   340 26  358 10  1
16  1730     0   0      0   0       0   0        0   0      0   0     0   0     0   0   335 27  358  8  1
16  1750     0   0      0   0       0   0        0   0      0   0     0   0     0   0   325 24  360  8  1
16  1810     0   0      0   0       0   0        0   0      0   0     0   0     0   0   293 10   90  8  1
16  1830     0   0      0   0       0   0        0   0      0   0     0   0     0   0    40  4  177  8  1
16  1850     0   0      0   0       0   0        0   0      0   0     0   0     0   0    30 26  270  8  1
16  1910     0   0      0   0       0   0        0   0      0   0     0   0     0   0   290 18   97  8  1
16  1930     0   0      0   0       0   0        0   0      0   0     0   0     0   0    95  5  182  8  1
16  1950     0   0      0   0       0   0        0   0      0   0     0   0     0   0    40  5  182  8  1
16  2010     0   0      0   0       0   0        0   0      0   0     0   0     0   0    10 25  274  8  1
16  2030     0   0      0   0       0   0        0   0      0   0     0   0     0   0   275 16   90  8  1
16  2050     0   0      0   0       0   0 A      0   0      0   0     0   0     0   0    90  5  180  8  1
16  2110     0   0      0   0    8000   3 V      0   0      0   0     0   0     0   0    90  5  100  8  1
16  2130     0   0      0   0    8050   1 R      0   0      0   0     0   0     0   0   270  5   75  0  1
16  2150     0   0   1150 150 R  8050   6 R      0   0      0   0     0   0     0   0    15 20   30  8  2
16  2210     0   0   5000 181 R  4600   6 R      0   0      0   0     0   0     0   0   330 20   30  8  1
16  2230     0   0  10200 195 R  2300 235 R      0   0      0   0     0   0     0   0   320 22   30  8  1
16  2250     0   0  17650 202 R  9100 212 R      0   0      0   0     0   0     0   0   300 15   30  8  1
16  2310     0   0  22550 202 R 14700 212 R      0   0      0   0     0   0     0   0   300 17   15  0  1
16  2330     0   0  23900 205 R 15150 203 R      0   0      0   0     0   0     0   0   230 15   95  0  1
16  2350     0   0      0   0       0   0        0   0      0   0     0   0     0   0   230 10  110  0  1
17    10     0   0  24450 207 R     0   0        0   0      0   0     0   0     0   0   230 15  110  0  1
17    30     0   0  24750 210 R     0   0        0   0      0   0     0   0     0   0   210  5   95  0  1
17    50     0   0  22600 208 R     0   0        0   0      0   0     0   0     0   0    30 15  225  8  1
17   110     0   0  17800 201 R     0   0        0   0      0   0     0   0     0   0    40 12  223  8  1
17   130     0   0  12800 206 R     0   0        0   0      0   0     0   0     0   0    39  9  208  8  1
```

```
NOTE1***  THE FIGURES 999 IN THE DROGUE OR DRIFT OBJECT BEARING IS A SPECIAL
          CODE USED IN SOME CASES DURING DATA PROCESSING TO INDICATE MISSING DATA.
                                                                                        **ABBREVIATIONS**
NOTE2***  WIND DATA CODE EXPLAINATION**
      0= RELATIVE WIND RECORDED IN DEGREES TRUE                                      WDC= WIND DATA CODE
      1= RELATIVE WIND RECORDED RELATIVE TO SHIP HEAD                                CD1= CURRENT DROGUE 1
      2= QUESTIONABLE WIND DATA                                                      CD2= CURRENT DROGUE 2
      3= NO WIND DATA RECORDED                                                       HOW= HOW BEARINGS WERE OBTAINED
      4= WIND RECORDED IN DEGREES TRUE                                                 R= RADAR
                                                                                       V= VISUAL
                                                                                       A= ALONGSIDE

                                 H                  H    7-MAN     H                H                H                H              H     REL.          W
              REFERENCE     O       CD-1       O     RAFT      O    16FT BOAT  O    18FT BOAT  O   30FT BOAT  O      CD-2     O     WIND    SHIP   D
DAY  TIME(Z)  RANGE  BRG    W   RANGE BRG W   RANGE BRG W   RANGE   BRG W  RANGE  BRG W  RANGE  BRG W  RANGE BRG W   DIR SPD CRS SPD C
17     150       0     0       10825 205 R       0    0       7450  300 R     0     0       0     0       0    0     240  5   55  0  1
17     210       0     0       11200 207 R       0    0       7500  298 R     0     0       0     0       0    0     150  5  155  8  1
17     230       0     0       11450 212 R       0    0       7450  301 R     0     0       0     0       0    0     275  5   17  0  1
17     250       0     0        1190 209 R       0    0       7350  306 R     0     0       0     0       0    0     340 18  320  8  1
17     310       0     0       14600 182 R       0    0        750  320 R     0     0       0     0       0    0     330 19  323 10  1
17     330       0     0       15850 183 R       0    0        200  134 V     0     0       0     0       0    0     310  5  330  5  1
17     350       0     0       16750 186 R       0    0       1050  139 R     0     0       0     0       0    0     295  6  355  0  1
17     410       0     0       17200 186 R       0    0       1400  135 R     0     0       0     0       0    0     270  3  322  0  1
17     430       0     0       17475 186 R       0    0       1450  132 R     0     0       0     0       0    0     360  6  277  0  1
17     450       0     0       17600 184 R       0    0       1800  135 R     0     0       0     0       0    0     310  8  304  0  1
17     510       0     0       17850 184 R       0    0       1900  133 R     0     0       0     0       0    0     335 10  306  0  1
17     530       0     0       18200 186 R       0    0       2100  135 R     0     0       0     0       0    0     320 10  301  0  1
17     550       0     0       18350 193 R       0    0       2250  142 R     0     0       0     0       0    0      45  5  223  0  1
17     610       0     0       18450 196 R       0    0       2400  142 R     0     0       0     0       0    0      75  8  195  0  1
17     630       0     0       18700 195 R       0    0       2550  144 R     0     0       0     0       0    0      60  8  199  0  1
17     650       0     0       18900 198 R       0    0       2600  145 R     0     0       0     0       0    0      55  9  193  0  1
17     710       0     0       19050 197 R       0    0       2950  143 R     0     0       0     0       0    0      57 11  189  0  1
17     730       0     0       19300 201 R       0    0       3100  148 R     0     0       0     0       0    0      75 12  177  0  1
17     750       0     0       19650 201 R       0    0       3500  154 R     0     0       0     0       0    0      70 12  177  0  1
17     810       0     0       19750 203 R       0    0       3900  152 R     0     0       0     0       0    0      90  6  176  0  1
17     830       0     0       20100 199 R       0    0       4200  153 R     0     0       0     0       0    0      75 14  189  0  1
17     850       0     0       20200 200 R       0    0       4350  153 R     0     0       0     0       0    0      90 13  183  0  1
17     910       0     0       20750 205 R       0    0       5000  153 R     0     0       0     0       0    0      90 11  182  0  1
17     930       0     0       21000 207 R       0    0       5350  160 R     0     0       0     0       0    0      80 10  182  0  1
17     950       0     0       21250 204 R       0    0       5750  160 R     0     0       0     0       0    0      90 10  185  0  1
17    1010       0     0       21250 206 R       0    0       6150  160 R     0     0       0     0       0    0      90 15  185  0  1
17    1030       0     0       18550 218 R       0    0        950  155 R     0     0       0     0       0    0      40 10  160  8  1
17    1050       0     0       17900 222 R       0    0        750  142 R     0     0       0     0       0    0     120 13  140  6  1
17    1110       0     0       17550 225 R       0    0        250   55 R     0     0       0     0       0    0      90 14  185  0  1
17    1130       0     0       17650 230 R       0    0         50  343 V     0     0       0     0       0    0     150 15   97  0  1
17    1150       0     0       16000 233 R       0    0        250   55 V     0     0       0     0       0    0     360 17  225  8  1
17    1210       0     0       11400 241 R       0    0        175   22 V     0     0       0     0       0    0     360 25  225  8  1
17    1230       0     0        5600 248 R       0    0          0    0       0     0       0     0       0    0     345 25  222  8  1
17    1250       0     0        1000 267 R       0    0          0    0       0     0       0     0       0    0     335 21  260  8  1
17    1310       0     0        2350  99 R       0    0          0    0       0     0       0     0       0    0     290 11  300  0  1
17    1330       0     0        2600 110 R       0    0        300  120 V     0     0       0     0       0    0     270  6  340  0  1
17    1350       0     0        1400 255 R    2800  284 R     2250  271 R     0     0       0     0       0    0     340 18  255  0  1
17    1410       0     0         200 337 V    2000  319 R      850  316 R     0     0       0     0       0    0     210  8   37  0  1
17    1430       0     0         800 255 R    2150  304 R      825  290 R     0     0       0     0       0    0     240 12  340  0  1
17    1450       0     0        1850 221 R    1900  282 R      900  229 R     0     0       0     0       0    0     240 16  345  0  1
17    1510       0     0        2300 217 R    1800  273 R     1000  198 R     0     0       0     0       0    0     235 11  345  0  1
17    1530       0     0        2700 225 R    2000  282 R     1050  197 R     0     0       0     0       0    0     215 17  350  0  1
17    1550       0     0        3300 225 R    2100  281 R     1050  191 R     0     0       0     0       0    0     235 18  345  0  1
17    1610       0     0        3850 230 R    2300  285 R      950  194 R     0     0       0     0       0    0     235 20  315  0  1
17    1630       0     0           0 999      2450  280 R     1000  183 R     0     0       0     0       0    0     230 18  325  0  1
17    1650       0     0           0 999      2500  280 R     1000  184 R     0     0       0     0       0    0     235 20  320  0  1
17    1710       0     0        5100 226 R    2700  279 R     1000  177 R     0     0       0     0       0    0     235 19  321  0  1
17    1730       0     0        3550 224 R    2500  346 R     2500   66 R     0     0       0     0       0    0     225 19  225  0  2
```

```
NOTE1***  THE FIGURES 999 IN THE DROGUE OR DRIFT OBJECT BEARING IS A SPECIAL                            **ABBREVIATIONS**
          CODE USED IN SOME CASES DURING DATA PROCESSING TO INDICATE MISSING DATA.

NOTE2***  WIND DATA CODE EXPLAINATION**                                                                 WDC= WIND DATA CODE
      0= RELATIVE WIND RECORDED IN DEGREES TRUE                                                         CD1= CURRENT DROGUE 1
      1= RELATIVE WIND RECORDED RELATIVE TO SHIP HEAD                                                   CD2= CURRENT DROGUE 2
      2= QUESTIONABLE WIND DATA                                                                         HOW= HOW BEARINGS WERE OBTAINED
      3= NO WIND DATA RECORDED                                                                            R= RADAR
      4= WIND RECORDED IN DEGREES TRUE                                                                    V= VISUAL
                                                                                                          A= ALONGSIDE
                             H                 H    7-MAN     H                H                 H                 H                H    REL.            W
               REFERENCE     O      CD-1       O    RAFT      O  16FT BOAT O    18FT BOAT O       30FT BOAT O        CD-2      O    WIND     SHIP   D
DAY  TIME(Z)   RANGE  BRG    W   RANGE BRG     W  RANGE BRG   W  RANGE  BRG W   RANGE  BRG W      RANGE  BRG W     RANGE BRG  W   DIR SPD  CRS SPD C

          56 OBSERVATIONS             ROSAR 1/70           RUN 1

15    1750       0    0       2850  73 R       0   0      2900  134 R      0     0            0     0            0   0     355 37   325 11 1
15    1810       0    0       7050 118 R       0   0      8800  140 R      0     0            0     0            0   0       0  0     0  0 1
15    1830       0    0      10100 126 R       0   0     11800  147 R      0     0            0     0            0   0       0  0     0  0 1
15    1850       0    0      10500 107 R       0   0     11450  139 R      0     0            0     0            0   0       0  0     0  0 1
15    1910       0    0      10950  94 R       0   0     10650  132 R      0     0            0     0            0   0       0  0     0  0 1
15    1930       0    0      11200  87 R       0   0     10400  132 R      0     0            0     0            0   0       0  0     0  0 1
15    1950       0    0      12150  86 R       0   0      9950  132 R      0     0            0     0            0   0     180 20   170  0 1
15    2010       0    0      13200  70 R       0   0      9150  118 R      0     0            0     0            0   0     150 16   190  0 1
15    2030       0    0      13000  68 R       0   0      8450  125 R      0     0            0     0            0   0     340 27   350  0 1
15    2050       0    0      13200  70 R       0   0      8650  130 R      0     0            0     0            0   0     240 20    95  0 1
15    2110       0    0      14150  67 R    1450 338 R    8750  130 R      0     0            0     0            0   0     240 17    95  0 1
15    2130       0    0      14950  67 R    1550 338 R    8900  130 R      0     0            0     0            0   0     240 17   135  6 1
15    2150       0    0      15800  67 R    2700 337 R    7850  128 R      0     0            0     0            0   0     150 17   180  0 1
15    2210       0    0      16400  55 R       0 999      7450  132 R      0     0            0     0            0   0     150 20   193  0 1
15    2230       0    0      17150  45 R    6550 355 R    6650  129 R      0     0            0     0            0   0     178 17   180  0 1
15    2250       0    0      18200  42 R       0 999      6200  125 R      0     0            0     0            0   0      60 17   250  0 1
15    2310       0    0      18800  38 R       0 999      5850  130 R      0     0            0     0            0   0      90 17   245  0 1
15    2330       0    0      19650  37 R       0 999      5750  130 R      0     0            0     0            0   0      90 18   245  0 1
15    2350       0    0      20300  37 R       0 999      5550  134 R      0     0            0     0            0   0      85 20   255  0 1
16      10       0    0      19250  38 R       0 999      6000  157 R      0     0            0     0            0   0     280 20    70  8 1
16      30       0    0      18000  34 R       0 999      6500  185 R      0     0            0     0            0   0     240 15    90  0 1
16      50       0    0      18800  34 R       0 999      6500  189 R      0     0            0     0            0   0     240 15   100  0 1
16     110       0    0      20800  33 R       0 999      5500  178 R      0     0            0     0            0   0      70 14   250  6 1
16     130       0    0      22900  35 R       0 999      5150  164 R      0     0            0     0            0   0      70 16   248  0 1
16     150       0    0      23450  35 R       0 999      5050  164 R      0     0            0     0            0   0      90 15   245  0 1
16     210       0    0      23300  35 R       0 999      6550  163 R      0     0            0     0            0   0     330 25   354  8 1
16     230       0    0      21075  45 R      75  68 V    9500  168 R      0     0            0     0            0   0     210 17   127  0 1
16     250       0    0      22200  50 R     160  97 V    9800  170 R      0     0            0     0            0   0     230 22   103  0 1
16     310       0    0      22850  47 R     160  89 V    9850  170 R      0     0            0     0            0   0     245 18   100  0 1
16     330       0    0      23450  47 R     130  84 V    9750  170 R      0     0            0     0            0   0     249 19    98  0 1
16     350       0    0      24050  46 R     130  81 V    9750  171 R      0     0            0     0            0   0     240 20   102  0 1
16     410       0    0      24950  47 R     120  76 V    9600  171 R      0     0            0     0            0   0     240 17   100  0 1
16     430       0    0      25700  47 R     120  73 V    9850  170 R      0     0            0     0            0   0     250 10   102  0 1
16     450       0    0      26500  45 R     130  73 V    9850  168 R      0     0            0     0            0   0     247 19   104  0 1
16     510       0    0      27100  43 R     200  70 V   10050  166 R      0     0            0     0            0   0     240 21   101  0 1
16     530       0    0          0-999       200  66 V   10200  168 R      0     0            0     0            0   0     235 19    97  0 1
16     550       0    0      25200  42 R    2500 216 V   12400  179 R      0     0            0     0            0   0     300 25    47  8 1
16     610       0    0      21600  41 R    7000 225 V   15500  192 R      0     0            0     0            0   0     275  8    76  0 1
16     630       0    0      22450  40 R    5500 226 V   15750  192 R      0     0            0     0            0   0     250 16   109  0 1
16     650       0    0      23300  37 R    5500 228 V   16100  192 R      0     0            0     0            0   0     240 18   105  0 1
16     710       0    0      23900  41 R    5500 229 V   16100  192 R      0     0            0     0            0   0     240 15   106  0 1
16     730       0    0          0   0      5000 239 V   16100  193 R      0     0            0     0            0   0     250 17   100  0 1
16     750       0    0          0   0         0   0     19850  199 R      0     0            0     0            0   0     305 31    41  8 1
16     810       0    0          0   0         0   0     25000  202 R      0     0            0     0            0   0     310 27    35  8 1
16     830       0    0          0   0         0   0         0    0        0     0            0     0            0   0     329 29    34  8 1
16     850       0    0          0   0         0   0         0    0        0     0            0     0            0   0     327 25    33  8 1
16     910       0    0          0   0         0   0         0    0        0     0            0     0            0   0     240 15    97  0 1
16     930       0    0          0   0         0   0         0    0        0     0            0     0            0   0     240 16    97  0 1
16     950       0    0          0   0         0   0         0    0        0     0            0     0            0   0     240 17    95  0 1
16    1010       0    0          0   0         0   0         0    0        0     0            0     0            0   0     240 15   104  0 1
16    1030       0    0          0   0         0   0         0    0        0     0            0     0            0   0     250 10   100  0 1
16    1050       0    0          0   0         0   0         0    0        0     0            0     0            0   0     230 17    94  0 1
16    1110       0    0          0   0         0   0 A       0    0        0     0            0     0            0   0       5 25   310  8 1
16    1130       0    0          0   0         0   0 A       0    0        0     0            0     0            0   0     240 18    90  0 1
16    1150       0    0          0   0         0   0 A       0    0        0     0            0     0            0   0     250 10    95  0 1
16    1210       0    0          0   0         0   0 A       0    0        0     0            0     0            0   0     360 20   345  0 1
```

(continued)

```
17   1750       0    0    2500 224 R   2950   9 R   4450  69 R    0    0    0    0    0    0   340 30  222  0  1
17   1810       0    0       0   0 A   6650  19 R   8050  50 R    0    0    0    0    0    0   305 26  255  0  1
17   1830       0    0       0 999     8050  27 R   9350  48 R    0    0    0    0    0    0    20 29  160  0  1
17   1850       0    0       0 999     4650 341 R   4750  39 R    0    0    0    0    0    0   210  4   30 12  1
17   1910       0    0       0 999     5500 236 R   2750 179 R    0    0    0    0    0    0   160  9   30 10  1
17   1930       0    0       0 999     6900 220 R   4950 180 R    0    0    0    0    0    0   340 24  206  0  1
17   1950       0    0    2300 245 R   8900 235 R   4800 201 R    0    0    0    0    0    0    25 20  152  0  1
17   2010       0    0    3150 251 R   9150 237 R   4500 208 R    0    0    0    0    0    0    85 20  114  0  1
17   2030       0    0    4150 240 R   9800 235 R   4700 202 R    0    0    0    0    0    0    85 16  111  0  1
17   2050       0    0    4700 235 R   9800 235 R   4650 202 R    0    0    0    0    0    0    85 20  111  0  1
17   2110       0    0    5600 228 R  10450 230 R   4750 192 R    0    0    0    0    0    0    80 20  119  0  1
17   2130       0    0    6050 223 R  10650 230 R   5000 187 R    0    0    0    0    0    0    90 20  107  0  1
17   2150       0    0    6750 223 R  10950 230 R   4850 182 R    0    0    0    0    0    0    85 20  112  0  1
17   2210       0    0    7550 218 R  11200 227 R   5050 178 R    0    0    0    0    0    0    85 19  107  0  1
17   2230       0    0    8450 218 R  11200 226 R   5250 172 R    0    0    0    0    0    0    80 21  115  0  1
17   2250       0    0    8950 215 R  11450 225 R   5300 169 R    0    0    0    0    0    0    80 18  112  0  1
17   2310       0    0   10050 215 R      0 999      5600 166 R    0    0    0    0    0    0    90 25  115  0  1
17   2330       0    0   10150 212 R      0 999      5650 160 R    0    0    0    0    0    0   330 30  225  6  1
17   2350       0    0    7250 211 R   7600 223 R   5500 110 R    0    0    0    0    0    0   340 30  225  6  1
18     10       0    0    5300 211 R   5850 223 R   7300  85 R    0    0    0    0    0    0   250 20  295  0  1
18     30       0    0    6000 202 R   5400 224 R   7850  88 R    0    0    0    0    0    0   240 20  315  0  1
18     50       0    0    6650 205 R   4700 232 R   8200  86 R    0    0    0    0    0    0   240 21  314  0  1
18    110       0    0    7350 203 R   4450 237 R   8700  95 R    0    0    0    0    0    0   235 26  327  0  1
18    130       0    0    8050 205 R   4400 244 R   9200  83 R    0    0    0    0    0    0   245 24  315  0  1
18    150       0    0    8650 208 R   3900 254 R   9625  85 R    0    0    0    0    0    0   230 24  317  0  1
18    210       0    0    9250 208 R   3850 261 R  10100  85 R    0    0    0    0    0    0   230 23  322  0  1
18    230       0    0    9850 211 R   3950 268 R  10500  87 R    0    0    0    0    0    0   235 23  315  0  1
18    250       0    0   10600 210 R   4250 280 R  11000  84 R    0    0    0    0    0    0   235 22  315  0  1
18    310       0    0   11300 209 R   4800 286 R  11550  85 R    0    0    0    0    0    0   240 30  310  0  1
18    330       0    0   11975 210 R   5350 295 R  11975  84 R    0    0    0    0    0    0   230 25  313  0  1
18    350       0    0   12750 212 R   6000 302 R  12450  83 R    0    0    0    0    0    0   235 26  315  0  1
18    410       0    0   13300 215 R   6700 311 R  12750  84 R    0    0    0    0    0    0   245 26  320  0  1
18    430       0    0   14050 214 R   7450 313 R  12950  81 R    0    0    0    0    0    0   240 25  314  0  1
18    450       0    0   14750 214 R   8700 317 R  12850  82 R    0    0    0    0    0    0   235 29  312  0  1
18    510       0    0   15650 219 R   9400 318 R  12700  82 R    0    0    0    0    0    0   240 30  310  0  1
18    530       0    0   16700 219 R  10750 316 R  12200  82 R    0    0    0    0    0    0   240 29  309  0  1
18    550       0    0   17450 218 R  10800 317 R  13000  80 R    0    0    0    0    0    0   235 29  306  0  1
18    610       0    0   18550 220 R  11950 318 R  13450  69 R    0    0    0    0    0    0   230 34  304  0  1
18    630       0    0   21550 220 R  11200 314 R  10850  73 R    0    0    0    0    0    0   135 24   40  8  1
18    650       0    0   25000 215 R  11050 308 R      0   0      0    0    0    0    0    0   240 28  308  0  1
18    710       0    0   25900 213 R  11400 307 R      0   0      0    0    0    0    0    0   235 24  315  0  1
18    730       0    0   28700 216 R      0   0        0   0      0    0    0    0    0    0    85 23   75  8  1
18    750       0    0   31650 220 R      0   0        0   0      0    0    0    0    0    0    75 24  114  8  1
18    810       0    0   32250 220 R      0   0        0   0      0    0    0    0    0    0    80 27  100  8  1
18    830       0    0       0   0        0   0        0   0      0    0    0    0    0    0    80 28  290 10  2
18    850       0    0   31200 204 R      0   0        0   0      0    0    0    0    0    0   275 22  290  8  1
18    910       0    0   30850 194 R      0   0        0   0      0    0    0    0    0    0   270 14  286  0  1
18    930       0    0   31750 196 R      0   0        0   0      0    0    0    0    0    0    40 38  132  8  1
18    950       0    0   36250 195 R      0   0        0   0      0    0    0    0    0    0   280 30  270  8  1
18   1010       0    0   36650 196 R      0   0        0   0      0    0    0    0    0    0   330 35  180  8  1
18   1030       0    0   36650 200 R      0   0        0   0      0    0    0    0    0    0   280 25   10  8  1
18   1050       0    0   35000 200 R      0   0        0   0      0    0    0    0    0    0   285 25   30  8  1
```

NOTE1*** THE FIGURES 999 IN THE DROGUE OR DRIFT OBJECT BEARING IS A SPECIAL
CODE USED IN SOME CASES DURING DATA PROCESSING TO INDICATE MISSING DATA.

NOTE2*** WIND DATA CODE EXPLAINATION**
0= RELATIVE WIND RECORDED IN DEGREES TRUE
1= RELATIVE WIND RECORDED RELATIVE TO SHIP HEAD
2= QUESTIONABLE WIND DATA
3= NO WIND DATA RECORDED
4= WIND RECORDED IN DEGREES TRUE

ABREVIATIONS

WDC= WIND DATA CODE
CD1= CURRENT DROGUE 1
CD2= CURRENT DROGUE 2
HOW= HOW BEARINGS WERE OBTAINED
R= RADAR
V= VISUAL
A= ALONGSIDE

123 OBSERVATIONS

ROSARE 5/70

RUN 1

DAY	TIME(Z)	REFERENCE RANGE	REFERENCE BRG	HOW	CD-1 RANGE	CD-1 BRG	HOW	7-MAN RAFT RANGE	7-MAN RAFT BRG	HOW	16FT BOAT RANGE	16FT BOAT BRG	HOW	18FT BOAT RANGE	18FT BOAT BRG	HOW	30FT BOAT RANGE	30FT BOAT BRG	HOW	CD-2 RANGE	CD-2 BRG	HOW	REL. WIND DIR	REL. WIND SPD	SHIP CRS	SHIP SPD	WDC
6	30	9750	13	R	0	0	A	0	0		0	0		0	0		0	0		0	0		205	5	280	0	0
6	50	10000	14	R	0	0	A	0	0		0	0		0	0		0	0		0	0		200	12	115	0	0
6	110	9900	14	R	0	0	A	0	0		0	0		0	0		0	0		0	0		208	10	78	0	0
6	130	9300	15	R	0	0	A	0	0		0	0		0	0		0	0		0	0		200	10	70	0	0
6	150	9100	16	R	0	0	A	0	0		0	0		0	0		0	0		0	0		210	10	70	0	0
6	210	10600	14	R	0	0	A	0	0		0	0		0	0		0	0		0	0		203	12	145	0	0
6	230	10500	9	R	0	0	A	0	0		0	0		0	0		0	0		0	0		206	15	77	0	0
6	250	10200	11	R	0	0	A	0	0		0	0		0	0		0	0		0	0		210	11	90	0	0
6	310	11525	9	R	0	0	A	0	0		0	0		0	0		0	0		0	0		200	15	140	0	0
6	330	11300	5	R	0	0	A	0	0		0	0		0	0		0	0		0	0		190	12	125	0	0
6	350	12100	6	R	0	0	A	0	0		0	0		0	0		0	0		0	0		282	4	278	0	1
6	410	12700	11	R	0	0	A	0	0		0	0		0	0		0	0		0	0		64	12	129	0	1
6	430	12700	9	R	0	0	A	0	0		0	0		0	0		0	0		0	0		40	14	150	0	1
6	450	12600	11	R	0	0	A	0	0		0	0		0	0		0	0		0	0		129	12	73	0	1
6	510	13200	9	R	0	0	A	0	0		0	0		0	0		0	0		0	0		90	14	99	0	1
6	530	13700	9	R	0	0	A	0	0		0	0		0	0		0	0		0	0		130	14	66	0	1
6	550	13750	12	R	0	0	A	0	0		0	0		0	0		0	0		0	0		52	15	133	0	1
6	610	14500	12	R	0	0	A	0	0		0	0		0	0		0	0		0	0		190	13	11	0	1
6	630	14400	14	R	0	0	A	0	0		0	0		0	0		0	0		0	0		90	13	110	0	1
6	650	15100	17	R	0	0	A	0	0		0	0		0	0		0	0		0	0		230	13	336	0	1
6	710	14750	17	R	0	0	A	0	0		0	0		0	0		0	0		0	0		105	13	87	0	1
6	730	15200	16	R	0	0	A	0	0		0	0		0	0		0	0		0	0		90	11	99	0	1
6	750	15000	19	R	0	0	A	0	0		0	0		0	0		0	0		0	0		138	10	74	0	1
6	810	16300	21	R	0	0	A	0	0		0	0		0	0		0	0		0	0		105	10	85	0	1
6	830	16300	25	R	0	0	A	0	0		0	0		0	0		0	0		0	0		90	13	130	0	1
6	850	15700	22	R	0	0	A	0	0		0	0		0	0		0	0		0	0		130	13	55	0	1
6	910	16600	22	R	0	0	A	0	0		0	0		0	0		0	0		0	0		290	6	265	0	1
6	930	16800	27	R	0	0	A	0	0		0	0		0	0		0	0		0	0		280	6	275	0	1
6	950	16500	30	R	0	0	A	0	0		0	0		0	0		0	0		0	0		275	11	275	0	1
6	1010	16800	31	R	0	0	A	0	0		0	0		0	0		0	0		0	0		95	15	95	0	1
6	1030	16800	31	R	0	0	A	0	0		0	0		0	0		0	0		0	0		120	15	75	0	1
6	1050	0	0	R	0	0	A	0	0		0	0		0	0		0	0		0	0		310	14	240	0	1
6	1110	0	0		0	0	A	0	0		0	0		0	0		0	0		0	0		280	10	270	0	1
6	1130	17650	39	R	0	0	A	0	0		0	0		0	0		0	0		0	0		190	20	160	0	0
6	1150	17600	35	R	0	0	A	0	0		0	0		0	0		0	0		0	0		185	15	75	0	0
6	1210	17600	35	R	0	0	A	0	0		0	0		0	0		0	0		0	0		195	25	185	0	0
6	1230	18050	37	R	0	0	A	0	0		0	0		0	0		0	0		0	0		197	15	77	0	0
6	1250	18250	41	R	0	0	A	0	0		0	0		0	0		0	0		0	0		190	15	210	0	0
6	1310	17800	39	R	0	0	A	0	0		0	0		0	0		0	0		0	0		195	10	75	0	0
6	1330	17550	41	R	0	0	A	0	0		0	0		0	0		0	0		0	0		190	12	79	0	0
6	1350	17400	47	R	0	0	A	0	0		0	0		0	0		0	0		0	0		195	15	73	0	0
6	1410	17000	47	R	0	0	A	0	0		0	0		0	0		0	0		0	0		210	15	30	0	0
6	1430	16550	54	R	0	0	A	0	0		0	0		0	0		0	0		0	0		195	8	255	0	0
6	1450	17050	54	R	0	0		0	0		0	0	A	0	0		0	0		0	0		200	15	145	0	0
6	1510	16200	58	R	0	0		0	0		0	0	A	0	0		0	0		0	0		224	10	300	0	0

(continued)

```
6  1530  16850  65 R   4750 179 R      0   0      9350 119 R   0  0   0  0   0  0   188 15 234  0  1
6  1550      0   0        0   0        0   0         0   0     0  0   0  0   0  0   195 15 234  0  1
6  1610      0   0        0   0        0   0         0   0     0  0   0  0   0  0   135 14  54  0  1
6  1630  16000  71 R   2755 188 R   1580 198 R    2080 108 R   0  0   0  0   0  0   124 17 134  0  1
6  1650      0   0     2790 205 R   1310 238 R    1895  90 R   0  0   0  0   0  0   110 14 112  0  1
6  1710  15200  75 R   3425 204 R   1645 236 R    1900  86 R   0  0   0  0   0  0   185 13  45  0  1
6  1730  15100  77 R   3790 208 R   1730 236 R    1970  90 R   0  0   0  0   0  0   184 12  44  0  1
6  1750  13600  75 R      0   0     2845 243 R    1100 103 R   0  0   0  0   0  0   182 13 128  0  1
6  1830  15000  82 R      0   0     1890 205 R    3130 103 R   0  0   0  0   0  0    60 15 134  0  1
6  1930      0   0        0   0     1825 194 R       0   0     0  0   0  0   0  0   154  7  77  0  1
6  2010  18800  92 R      0   0        0   0      2860 188 R   0  0   0  0   0  0    45 13 142  0  2
6  2030      0   0     5820 272 R   2250 311 R    2110 266 R   0  0   0  0   0  0   344 10 258  0  1
6  2110  16800  50 R      0   0        0   0         0   0     0  0   0  0   0  0   144 18 115  0  1
6  2130      0   0        0   0        0   0         0   0     0  0   0  0   0  0   150 12 114  0  1
6  2210      0   0        0   0        0   0         0   0     0  0   0  0   0  0   185  9 238  0  1
6  2230  14800  71 R   4980 233 R   3020  13 R    6465  59 R   0  0   0  0   0  0    14 10  25  0  1
6  2250  14600  77 R   6010 234 R   1950   6 R    5690  70 R   0  0   0  0   0  0   125  5 125  0  1
6  2310  14600  75 R   6260 231 R   1715  12 R    5820  74 R   0  0   0  0   0  0   205  6  74  0  1
6  2330  14050  80 R   6675 230 R   1550  19 R    5355  79 R   0  0   0  0   0  0   150  6  78  0  1
6  2350  14900  78 R   7200 228 R   1250  35 R    5400  81 R   0  0   0  0   0  0   174  4  74  0  1
7    10  15000  76 R   7400 230 R   1150  51 R    6550  84 R   0  0   0  0   0  0   134  7  73  0  1
7    30  13750  61 R   8600 262 R   4650 338 R    5350  45 R   0  0   0  0   0  0    33  7 167  0  1
7    50  14300  59 R   8710 266 R   5350 340 R    6010  41 R   0  0   0  0   0  0   304  4 254  0  1
7   110  14900  61 R   8500 266 R   5150 348 R    6250  45 R   0  0   0  0   0  0   334  6 257  0  1
7   130  14900  60 R   9700 267 R   4850 350 R    6300  54 R   0  0   0  0   0  0   294  8 335  0  1
7   150  14700  61 R   9300 264 R   4550 348 R    6250  59 R   0  0   0  0   0  0   293  7 347  0  1
7   210  14650  63 R   9450 265 R   4300 349 R    6350  67 R   0  0   0  0   0  0   274  9   5  0  1
7   230  14650  63 R   9900 265 R   4050 347 R    6400  73 R   0  0   0  0   0  0   275  7   3  0  1
7   250  14700  66 R  10250 264 R   3850 342 R    5950  76 R   0  0   0  0   0  0   285  4  19  0  1
7   310  14650  60 R  10550 268 R   3650 350 R    6300  79 R   0  0   0  0   0  0   270  5  15  0  1
7   330  15000  59 R  10900 263 R   3450 346 R    6050  82 R   0  0   0  0   0  0   240  4  49  0  1
7   350  15200  55 R  11150 262 R   3250 354 R    6150  83 R   0  0   0  0   0  0   220  8  55  0  1
7   410  15250  63 R  11500 266 R   2900 357 R    6210  92 R   0  0   0  0   0  0   274  6   9  0  1
7   430  15350  61 R  11850 264 R   2700 348 R    6350  99 R   0  0   0  0   0  0   255  6  15  0  1
7   510  13500  62 R      0   0        0   0      5100 122 R   0  0   0  0   0  0   168 12 138  0  1
7   610  18250  65 R      0   0        0   0      9400 107 R   0  0   0  0   0  0   134 10 134  0  1
7   630  18450  66 R  11500 265 R   2550  58 R    9800 108 R   0  0   0  0   0  0   160 13 151  0  1
7   710      0   0    12150 268 R   2200  67 R    9750 112 R   0  0   0  0   0  0   124 14 219  0  1
7   730  18850  64 R  12400 273 R   1950  69 R    9700 111 R   0  0   0  0   0  0   144 14 225  0  1
7   750  19300  62 R      0   0     1650  56 R    9400 115 R   0  0   0  0   0  0   120 17 225  0  1
7   810  19600  57 R      0   0        0   0      9400 112 R   0  0   0  0   0  0   124 22 237  0  1
7   830  22200  65 R  10600 285 R   3500  85 R       0   0     0  0   0  0   0  0    75 18 278  0  1
7   850  23000  61 R  10600 288 R   3550  78 R       0   0     0  0   0  0   0  0   134 18 237  0  1
7   910  23500  61 R  11350 292 R   3200  78 R   11350 119 R   0  0   0  0   0  0   124 23 293  0  1
7   930  24100  60 R  11500 296 R   2900  73 R   11150 117 R   0  0   0  0   0  0   120 17 243  0  1
7   950  23900  56 R  12200 293 R   2700  66 R   11000 121 R   0  0   0  0   0  0   118 22 239  0  1
7  1010  25050  55 R  12500 300 R   2400  53 R   11750 120 R   0  0   0  0   0  0   124 20 243  0  1
7  1030  25900  55 R      0   0     2700  46 R   10600 121 R   0  0   0  0   0  0   123 17 244  0  1
7  1050  26300  52 R      0   0     2350  32 R       0   0     0  0   0  0   0  0   124 17 248  0  1
7  1110  28800  61 R  10900 309 R   4300  87 R       0   0     0  0   0  0   0  0    42 30 315 10  1
7  1130      0   0     5100 314 R  12000 111 R       0   0     0  0   0  0   0  0    24 25 355  0  1
7  1210      0   0        0   0 A  15600 121 R       0   0     0  0   0  0   0  0   180 17 194  0  1
7  1230      0   0        0   0 A  13450 175 R       0   0     0  0   0  0   0  0    14 33 354  0  1
7  1250      0   0        0   0        0   0         0   0     0  0   0  0   0  0   190 15 155  0  1
7  1330      0   0        0   0        0   0         0   0     0  0   0  0   0  0   144 24 247  0  1
7  1350      0   0        0   0        0   0         0   0     0  0   0  0   0  0   224 22 143  0  1
7  1410      0   0        0   0        0   0         0   0     0  0   0  0   0  0    61 27 344  0  1
```

```
NOTE1***  THE FIGURES 999 IN THE DROGUE OR DRIFT OBJECT BEARING IS A SPECIAL
          CODE USED IN SOME CASES DURING DATA PROCESSING TO INDICATE MISSING DATA.           **ABREVIATIONS**

NOTE2***  WIND DATA CODE EXPLAINATION**                                                      WDC= WIND DATA CODE
       0= RELATIVE WIND RECORDED IN DEGREES TRUE                                             CD1= CURRENT DROGUE 1
       1= RELATIVE WIND RECORDED RELATIVE TO SHIP HEAD                                       CD2= CURRENT DROGUE 2
       2= QUESTIONABLE WIND DATA                                                             HOW= HOW BEARINGS WERE OBTAINED
       3= NO WIND DATA RECORDED                                                                R= RADAR
       4= WIND RECORDED IN DEGREES TRUE                                                        V= VISUAL
                                                                                               A= ALONGSIDE

                           H              H     7-MAN     H              H              H              H              H    REL.           W
              REFERENCE    O     CD-1     O     RAFT      O  16FT BOAT   O  18FT BOAT   O  30FT BOAT   O     CD-2     O    WIND    SHIP   D
DAY  TIME(Z)  RANGE   BRG  W  RANGE BRG   W  RANGE  BRG   W  RANGE  BRG  W  RANGE  BRG  W  RANGE  BRG  W  RANGE BRG   W  DIR SPD CRS SPD C

 7   1430         0     0         0   0          0    0        0     0         0    0         0    0         0   0      330 26   35  8 1
 7   1450         0     0         0   0          0    0        0     0         0    0         0    0         0   0       90 20  240  6 1
 7   1510         0     0         0   0          0    0        0     0         0    0         0    0         0   0      120 20  242  4 1
 7   1530         0     0         0   0          0    0        0     0         0    0         0    0         0   0      250 10  244  4 1
 7   1710         0     0         0   0      12000  338 R      0     0         0    0         0    0         0   0      200 15  151  8 1
 7   1730         0     0         0   0          0    0        0     0         0    0         0    0         0   0      190 12  151  6 1
 7   1750         0     0         0   0          0    0        0     0         0    0         0    0         0   0      190 12  151  6 1
 7   1810         0     0         0   0      15500  346 R      0     0         0    0         0    0         0   0      350 25    0  8 1
 7   1830         0     0         0   0      16000  329 R      0     0         0    0         0    0         0   0      295 12   90 10 1
 7   1850         0     0         0   0      19500  322 R      0     0         0    0         0    0         0   0      150  7  190 10 1
 7   1910         0     0         0   0      25100  328 R      0     0         0    0         0    0         0   0      150 10  180 10 1
 7   1930         0     0         0   0          0    0        0     0         0    0         0    0         0   0       60 24  276 10 1
 7   1950         0     0         0   0          0    0        0     0         0    0         0    0         0   0       20 27   30 10 1
 7   2030         0     0         0   0          0    0        0     0         0    0         0    0         0   0      300  8   30  0 1
 7   2050         0     0         0   0      10600  315 R      0     0         0    0         0    0         0   0      100 10  254  8 1
 7   2110         0     0         0   0      10500  315 R      0     0         0    0         0    0         0   0       85 14  278  6 1
 7   2130         0     0         0   0      10300  308 R      0     0         0    0         0    0         0   0      140 10  220  6 1
 7   2150         0     0         0   0      11400  318 R      0     0         0    0         0    0         0   0      200 16  172  0 1
 7   2210         0     0         0   0      10600  325 R      0     0         0    0         0    0         0   0       30 26  335 10 1
 7   2230         0     0         0   0       4150  337 R      0     0         0    0         0    0         0   0       30 28  342 10 1
 7   2250         0     0         0   0          0    0 A      0     0         0    0         0    0         0   0      160 16  213  6 1

         72 OBSERVATIONS                    ROSARR 5/70           RUN 2

 8   1400     23800   139 R    4400   5 R     7675   19 R      0     0         0    0         0    0         0   0      150  7  230  0 1
 8   1420     20200   139 R    4900   2 R     9200   15 R      0     0         0    0         0    0         0   0      160  8  190  0 1
 8   1440     19450   139 R    5750   4 R     8000    0 R      0     0         0    0         0    0         0   0      194 10  157  6 1
 8   1500     19400   139 R    4650   6 R     7500   23 R      0     0         0    0         0    0         0   0      360 10   65  0 1
 8   1520     19850   147 R       0   0       4900  330 R      0     0         0    0         0    0         0   0      336 12    5  0 1
 8   1540     19000   143 R       0   0       5300  318 R      0     0         0    0         0    0         0   0      156 10  218  6 1
 8   1630     16800   144 R    6350 329 R        0    0        0     0         0    0         0    0         0   0      240  4  155  0 1
 8   1650     15250   145 R    7500 315 R        0    0        0     0         0    0         0    0         0   0        5 17  354  0 1
 8   1710     17200   151 R    5050 301 R        0    0        0     0         0    0         0    0         0   0        5 14  335  0 1
 8   1750     15200   147 R    5450 310 R        0    0        0     0         0    0         0    0         0   0       85 10  252  0 1
 8   1805     15850   149 R    5750 313 R        0    0     2400    86 R       0    0         0    0         0   0       66 16  334  0 1
 8   1810     15800   143 R    5450 323 R        0    0     2650    87 R       0    0         0    0         0   0       83 10  273  0 1
 8   1830     15950   139 R    5800 325 R        0    0     2450    89 R       0    0         0    0         0   0      125 11  249  6 1
 8   1850     16900   135 R       0   0          0    0     4150    99 R       0    0         0    0         0   0       20 14  324  0 1
 8   1910     17950   118 R       0   0          0    0        0     0         0    0         0    0         0   0       60 12  243  0 1
 8   1930     19000   159 R   10650  25 R        0    0        0     0         0    0         0    0         0   0      200  4   92  0 3
 8   2050     21500   127 R    3900  61 R     7750  120 R      0     0         0    0         0    0         0   0       10 12    2  6 1
 8   2150     17950   125 R    3100  33 R        0    0        0     0         0    0         0    0         0   0        0  0    0  0 1
 8   2217     12800   117 R       0   0          0    0        0     0         0    0         0    0         0   0        0  0    0  0 1
 8   2300     11250   105 R    6740 323 R     2320  328 R   1825   163 R       0    0         0    0         0   0      250  7  132  0 1
 8   2330     11100    97 R    7735 321 R     3025  322 R   1510   177 R       0    0         0    0         0   0      207  7  200  0 1
 8   2350     11250    93 R    8235 322 R     3665  331 R   1025   204 R       0    0         0    0         0   0      200  3  110  0 1
```

(continued)

```
9    10   10800  87 R   3570 321 R   4150 325 R   1315 229 R     0    0      0    0      0    0    185  4  111  0  3
9    30   11200  84 R   3890 320 R   4450 325 R   1310 243 R     0    0      0    0      0    0    120  8  270  0  1
9    50   11800  77 R   3650 330 R   5000 332 R   1160 277 R     0    0      0    0      0    0    150  7  240  0  1
9   110   12200  77 R   3760 333 R   5300 334 R   1420 283 R     0    0      0    0      0    0    175  4  268  0  1
9   130   12550  76 R  10000 333 R   5450 333 R   1645 283 R     0    0      0    0      0    0    145  7  259  0  1
9   150   14300  78 R   9400 344 R   4700 344 R    520 284 R     0    0      0    0      0    0     95  7  275  0  1
9   210   16900  83 R   7350  17 R   3900  19 R   2565 139 R     0    0      0    0      0    0     55  9  332  0  1
9   230   17250  83 R   6875  34 R   2575  34 R   3335 141 R     0    0      0    0      0    0     20  3   56  0  1
9   250   17150  83 R   6425  23 R   2035  24 R   3250 154 R     0    0      0    0      0    0    335  3   90  0  1
9   310   17150  83 R   6365  19 R   2060  18 R   2955 158 R     0    0      0    0      0    0    270  2  132  0  1
9   330   17350  82 R   6445  15 R   2140  15 R   2740 165 R     0    0      0    0      0    0    320  3  115  0  1
9   350   17850  80 R   6530  12 R   2255  14 R   2600 168 R     0    0      0    0      0    0    295  0  135  0  1
9   410   17750  80 R   6550   4 R   2250   5 R   2500 176 R     0    0      0    0      0    0    290  2   95  0  1
9   430   17750  80 R   6650   3 R   2370   3 R   2455 182 R     0    0      0    0      0    0    285  2  111  0  1
9   450   17950  79 R   5675 360 R   2400   1 R   2360 191 R     0    0      0    0      0    0    285  2   92  0  1
9   510   18100  77 R   6855 358 R   2550 359 R   2340 197 R     0    0      0    0      0    0    268  2   90  0  1
9   530   18200  76 R   6970 356 R   2665 356 R   2315 200 R     0    0      0    0      0    0    262  3   96  0  1
9   550   18350  77 R   7040 356 R   2745 356 R   2300 205 R     0    0      0    0      0    0    260  3  109  0  1
9   610   18500  75 R   7150 353 R   2875 353 R   2360 209 R     0    0      0    0      0    0    274  2   96  0  1
9   630   18200  76 R   7340 352 R   3050 352 R   2500 214 R     0    0      0    0      0    0    350 10   40  0  1
9   650   19600  79 R   6055  22 R   1775  19 R   3630 183 R     0    0      0    0      0    0     20  3   38  0  1
9   750   19700  80 R   6405   9 R   2025  12 R   4035 190 R     0    0      0    0      0    0    285  3   92  0  1
9   810   19650  80 R   6445   2 R   2110   2 R   4065 191 R     0    0      0    0      0    0    280  2   93  0  1
9   830   19750  79 R   6600 358 R   2370   1 R   4000 191 R     0    0      0    0      0    0    270  4   95  0  1
9   850   20000  76 R   6800 357 R   2535 359 R   4000 192 R     0    0      0    0      0    0    320  3   96  0  1
9   910   19650  76 R   6970 355 R   2620 357 R   4075 190 R     0    0      0    0      0    0    270  4  110  0  1
9   930   19950  77 R   7090 358 R   2760 359 R   4015 190 R     0    0      0    0      0    0    281  2  134  0  1
9   950   20050  76 R   7400 358 R   2900 358 R   3950 189 R     0    0      0    0      0    0    255  5   89  0  1
9  1010   19950  73 R   7500 357 R   3050 359 R   3950 189 R     0    0      0    0      0    0    320  2   93  0  1
9  1030   20000  72 R   7730 357 R   3300 358 R   3950 185 R     0    0      0    0      0    0    270  2   97  0  1
9  1050   20300  70 R   7900 360 R   3450 358 R   3900 189 R     0    0      0    0      0    0    290  2   97  0  1
9  1110   20450  70 R   8150 358 R   3500   1 R   3950 187 R     0    0      0    0      0    0    280  5  100  0  1
9  1130   20300  67 R   8200 356 R   3800 360 R   3850 180 R     0    0      0    0      0    0    280  5  100  0  1
9  1150   20350  70 R   8300 359 R   3700 359 R   3950 186 R     0    0      0    0      0    0     25 12   17  0  1
9  1210   20350  74 R   4600 350 R      0   0 A   7650 180 R     0    0      0    0      0    0    115  5  250  0  1
9  1230   20450  76 R   4850 352 R      0   0 A   7600 184 R     0    0      0    0      0    0    330  3  177  0  3
9  1250   20400  76 R   5140 348 R      0   0 A   7110 182 R     0    0      0    0      0    0    245  5  135  0  1
9  1310   20500  75 R   5080 341 R      0   0 A   7400 178 R     0    0      0    0      0    0    210  5  195  0  1
9  1330   19650  76 R      0   0     1500 290 R   8200 188 R     0    0      0    0      0    0    210  3  170  0  1
9  1350   19670  72 R      0   0     1675 268 R      0   0       0    0      0    0      0    0    330  7   45  0  1
9  1410   19700  73 R      0   0     1970 282 R      0   0       0    0      0    0      0    0    260  4  135  0  1
9  1430   19950  71 R      0   0     2390 294 R   7600 190 R     0    0      0    0      0    0    210  2  200  0  1
9  1450   20100  70 R      0   0     2750 299 R   7245 194 R     0    0      0    0      0    0    230  5  175  0  1
9  1510   20500  64 R      0   0     2970 304 R   7035 195 R     0    0      0    0      0    0    230  1  179  0  1
9  1530   21100  63 R      0   0     3385 309 R   6740 193 R     0    0      0    0      0    0    220  3  180  0  1
9  1550   21300  62 R      0   0     2670 300 R   7410 188 R     0    0      0    0      0    0    270  0  184  0  1
9  1610   21300  65 R      0   0     2540 293 R      0   0       0    0      0    0      0    0    250  0  210  0  1
9  1630   22850  63 R      0   0     2800 318 R   6700 184 R     0    0      0    0      0    0    130  0  217  0  1
9  1650   25200  53 R      0   0     5450 337 R   3900 190 R     0    0      0    0      0    0     20  5  205  0  1
9  1710   27550  51 R      0   0     8850 353 R    590 256 R     0    0      0    0      0    0    270  1  117  0  1
9  1730   27650  49 R      0   0     8850 347 R   1450 280 R     0    0      0    0      0    0     90  0  175  0  1
9  1750   26800  57 R      0   0     5120 350 R   3835 179 R     0    0      0    0      0    0      7 15  352 10  1

        57 OBSERVATIONS              ROSARP 5/70         RUN 3

9  1810       0   0     11000  21 R   4400 170 R      0   0       0    0      0    0      0    0      0 14   32 10  1
9  1850   21900  93 R    700  49 R      0   0          0   0       0    0      0    0      0    0    120  0  220  0  1
9  1910   22100  92 R   1120  36 R      0   0          0   0       0    0      0    0      0    0    100  1  290  0  1
9  1930   22400 101 R   1385  34 R      0   0          0   0       0    0      0    0      0    0     15  2  275  0  1
```

NOTE1*** THE FIGURES 999 IN THE DROGUE OR DRIFT OBJECT BEARING IS A SPECIAL CODE USED IN SOME CASES DURING DATA PROCESSING TO INDICATE MISSING DATA.

NOTE2*** WIND DATA CODE EXPLAINATION**
0= RELATIVE WIND RECORDED IN DEGREES TRUE
1= RELATIVE WIND RECORDED RELATIVE TO SHIP HEAD
2= QUESTIONABLE WIND DATA
3= NO WIND DATA RECORDED
4= WIND RECORDED IN DEGREES TRUE

ABREVIATIONS

WDC= WIND DATA CODE
CD1= CURRENT DROGUE 1
CD2= CURRENT DROGUE 2
HOW= HOW BEARINGS WERE OBTAINED
R= RADAR
V= VISUAL
A= ALONGSIDE

DAY	TIME(Z)	REFFERENCE RANGE	REFFERENCE BRG	HOW	CD-1 RANGE	CD-1 BRG	HOW	7-MAN RAFT RANGE	7-MAN RAFT BRG	HOW	16FT BOAT RANGE	16FT BOAT BRG	HOW	18FT BOAT RANGE	18FT BOAT BRG	HOW	30FT BOAT RANGE	30FT BOAT BRG	HOW	CD-2 RANGE	CD-2 BRG	HOW	REL. WIND DIR	REL. WIND SPD	SHIP CRS	SHIP SPD	WDC
9	1950	22500	90	R	1800	30	R	0	0		0	0		0	0		0	0		0	0		70	3	260	0	1
9	2010	22500	90	R	1750	30	R	0	0		0	0		0	0		0	0		0	0		58	1	264	0	1
9	2030	22850	89	R	1850	22	R	0	0		0	0		0	0		0	0		0	0		79	3	273	0	1
9	2050	23100	90	R	2600	23	R	0	0		0	0		0	0		0	0		0	0		75	4	270	0	1
9	2110	23700	88	R	3000	26	R	0	0		0	0		0	0		0	0		0	0		40	5	315	0	1
9	2130	24300	88	R	2800	34	R	0	0		0	0		0	0		0	0		0	0		10	7	343	0	1
9	2150	23900	90	R	1300	49	R	0	0		0	0		0	0		0	0		0	0		325	5	62	6	1
9	2210	22900	91	R	0	0		0	0		0	0		0	0		0	0		0	0		142	2	235	0	1
9	2230	23100	92	R	0	0		0	0		0	0		0	0		0	0		0	0		160	2	235	0	1
9	2350	32150	59	R	0	0	A	5500	310	R	6550	173	R	0	0		0	0		0	0		140	4	310	0	1
10	10	27600	60	R	5500	247	R	9200	267	R	0	0		0	0		0	0		0	0		350	3	330	0	1
10	30	27600	62	R	5500	237	R	9200	266	R	0	0		0	0		0	0		0	0		220	2	350	0	1
10	50	28100	62	R	5650	233	R	9700	256	R	0	0		0	0		0	0		0	0		30	10	320	8	1
10	110	32400	60	R	1350	263	R	6550	298	R	7300	173	R	0	0		0	0		0	0		150	2	217	0	1
10	130	33400	57	R	1300	277	R	6550	294	R	6930	169	R	0	0		0	0		0	0		108	4	277	0	1
10	150	33900	58	R	1000	293	R	6900	292	R	6950	167	R	0	0		0	0		0	0		135	3	265	0	1
10	210	34000	59	R	1200	304	R	6750	296	R	6650	164	R	0	0		0	0		0	0		115	4	256	0	1
10	230	34600	57	R	1400	312	R	7150	293	R	6700	159	R	0	0		0	0		0	0		100	4	256	0	1
10	250	34750	58	R	1600	317	R	7300	290	R	6750	163	R	0	0		0	0		0	0		125	3	264	0	1
10	310	35000	57	R	1850	322	R	7900	289	R	6930	156	R	0	0		0	0		0	0		130	3	267	0	1
10	330	35550	57	R	2050	322	R	8250	287	R	6950	154	R	0	0		0	0		0	0		160	3	252	0	1
10	350	36500	59	R	2750	333	R	7750	289	R	7200	148	R	0	0		0	0		0	0		160	4	276	0	1
10	510	37420	60	R	2800	344	R	9130	294	R	7750	138	R	0	0		0	0		0	0		30	5	0	0	1
10	610	39200	59	R	3950	344	R	10150	295	R	7950	135	R	0	0		0	0		0	0		30	5	0	0	1
10	710	39250	58	R	4500	134	R	10450	280	R	8750	134	R	0	0		0	0		0	0		140	3	270	0	1
10	730	38100	62	R	4550	340	R	11450	293	R	9750	129	R	0	0		0	0		0	0		150	4	272	0	1
10	810	39650	59	R	5050	341	R	11550	292	R	9900	127	R	0	0		0	0		0	0		20	7	0	0	1
10	850	40250	58	R	5450	341	R	10900	279	R	9450	122	R	0	0		0	0		0	0		160	6	280	0	1
10	910	39850	56	R	5600	342	R	0	0		9750	120	R	0	0		0	0		0	0		135	5	274	0	1
10	930	41100	56	R	5750	341	R	0	0		10350	122	R	0	0		0	0		0	0		126	6	277	0	1
10	950	44300	55	R	5600	9	R	10700	300	R	13850	111	R	0	0		0	0		0	0		140	6	290	0	1
10	1010	0	0		5950	13	R	13350	302	R	0	0		0	0		0	0		0	0		120	6	292	0	1
10	1030	44650	57	R	6100	9	R	10750	300	R	0	0		0	0		0	0		0	0		142	7	292	0	1
10	1110	0	0		6700	9	R	10200	303	R	0	0		0	0		0	0		0	0		55	11	314	8	1
10	1130	0	0		8100	62	R	5150	310	R	0	0		0	0		0	0		0	0		50	10	323	8	1
10	1150	0	0		11700	81	R	0	0	A	0	0		0	0		0	0		0	0		355	7	75	0	1
10	1210	0	0		0	0		0	0	A	0	0		0	0		0	0		0	0		280	3	145	0	1
10	1230	0	0		0	0		0	0		0	0		0	0		0	0		0	0		345	15	118	10	1
10	1510	38000	13	R	0	0		0	0		0	0		0	0		0	0		0	0		325	11	238	15	1
10	1900	13500	53	R	1570	229	R	0	0		0	0		0	0		0	0		0	0		0	7	50	0	1
10	1910	13800	49	R	1500	254	R	0	0		0	0		0	0		0	0		1640	325	R	150	10	270	0	1
10	1930	13300	40	R	3240	280	R	0	0		0	0		0	0		0	0		2680	303	R	70	10	180	8	2
10	1950	13650	41	R	2960	277	R	0	0		0	0		0	0		0	0		2380	300	R	95	10	339	0	1
10	2010	14150	40	R	2900	286	R	0	0		0	0		0	0		0	0		2545	309	R	110	8	295	0	1
10	2030	14650	37	R	3140	290	R	0	0		0	0		0	0		0	0		2830	311	R	95	8	296	0	1
10	2050	15100	40	R	3155	299	R	0	0		0	0		0	0		0	0		3645	318	R	100	11	297	0	1
10	2110	15400	39	R	3255	304	R	0	0		0	0		0	0		0	0		3275	323	R	113	12	288	0	1
10	2130	15850	37	R	3375	310	R	0	0		0	0		0	0		0	0		3495	323	R	120	10	295	0	1
10	2150	16250	39	R	3585	316	R	0	0		0	0		0	0		0	0		3735	328	R	100	12	330	0	1
10	2210	16600	37	R	3915	319	R	0	0		0	0		0	0		0	0		4025	328	R	120	10	330	0	1
10	2230	17150	36	R	4150	323	R	0	0		0	0		0	0		0	0		4380	330	R	115	10	310	0	1
10	2250	16900	42	R	2935	325	R	0	0		0	0		0	0		0	0		2975	331	R	50	14	355	0	1
10	2310	16700	49	R	1380	322	R	0	0		0	0		0	0		0	0		1530	331	R	0	13	350	0	1

```
NOTE1***  THE FIGURES 999 IN THE DROGUE OR DRIFT OBJECT BEARING IS A SPECIAL
          CODE USED IN SOME CASES DURING DATA PROCESSING TO INDICATE MISSING DATA.        **ABREVIATIONS**

NOTE2***  WIND DATA CODE EXPLAINATION**                                                   WDC= WIND DATA CODE
      0= RELATIVE WIND RECORDED IN DEGREES TRUE                                           CD1= CURRENT DROGUE 1
      1= RELATIVE WIND RECORDED RELATIVE TO SHIP HEAD                                     CD2= CURRENT DROGUE 2
      2= QUESTIONABLE WIND DATA                                                           HOW= HOW BEARINGS WERE OBTAINED
      3= NO WIND DATA RECORDE                                                               R= RADAR
      4= WIND RECORDED IN DEGREES TRUE                                                      V= VISUAL
                                                                                            A= ALONGSIDE


                               H               H   7-MAN    H              H              H                 H             H    REL.          W
                 REFERENCE     O      CD-1     O   RAFT     O  16FT BOAT   O  18FT BOAT   O   30FT BOAT     O    CD-2     O    WIND   SHIP   D
DAY  TIME(Z)   RANGE   BRG     W   RANGE BRG   W  RANGE BRG W  RANGE   BRG W  RANGE  BRG  W  RANGE   BRG    W  RANGE BRG  W  DIR SPD CRS SPD C

          14 OBSERVATIONS              EVSARR 9/70          RUN 1

11    1220        0     0              0    0      400 200 R     50     90 V    400  169 R       0      0          0    0      0   0    0  0 1
11    1356    13900    55 R         1950   49 R   1950  92 R   1650    103 R   1400  103 R       0      0          0    0    270  10   40  0 1
11    1410    13300    56 R         1250   58 R   2350  91 R   1450    103 R   1950   99 R       0      0          0    0    240   8   63  0 1
11    1430    12900    55 R         1000   44 R   2550  91 R   1550    112 R   2200   98 R       0      0          0    0    285   7   94  0 1
11    1450    11400    53 R          500  355 R   2400  94 R   1600    120 R   2300  102 R       0      0          0    0    360   6   32  0 1
11    1510    11050    53 R          650  289 R   2450 100 R   1870    128 R   2400  107 R       0      0          0    0    290   7   36  0 1
11    1530     9950    51 R         1050  272 R   2500 100 R   1950    135 R   2700  108 R       0      0          0    0    290   7   36  0 1
11    1730     4200    33 R         3400  265 R   2550 119 R   3900    173 R   3950  117 R       0      0          0    0    270   7   39  0 1
11    1750     3550    23 R         4300  262 R   2400 122 R   2900    182 R   4000  115 R       0      0          0    0    275   8  106  0 1
11    1810     3000    13 R         4300  268 R   2300 123 R   2700    185 R   4200  115 R       0      0          0    0    275  10  105  0 1
11    1830     1200   360 R         5150  256 R   3300 146 R   5600    183 R   5250  133 R       0      0          0    0     15  20  355  0 1
11    1850     2500   357 R         4800  276 R   2500 108 R   2200    186 R   5100  111 R       0      0          0    0    180  10  210  0 1
11    1910     1950   353 R         4600  273 R   3300 109 R   2550    175 R   6150  112 R       0      0          0    0    180  12  193  0 1
11    1930     1860   342 R         4750  274 R   3550 106 R   2450    177 R   6700  113 R       0      0          0    0     90   8  270  0 1


          64 OBSERVATIONS              EVSARR 9/70          RUN 2

11    2240    17400   219 R        16600  225 R      0   0        0      0     1600  137 R       0      0          0    0    115  12  254  3 1
11    2300    16350   212 R        14850  219 R   2200  93 R      0      0     2250  112 R       0      0          0    0     90   8  298  0 1
11    2340    13350   216 R        10900  225 R   4700  53 R   2800     31 R   4150   62 R       0      0          0    0    270  20  115  0 1
12       0    13700   218 R        10500  227 R   4400  47 R   2650     31 R   3650   55 R       0      0          0    0    270  20  115  0 1
12      20    13350   220 R        10000  229 R   4350  40 R   2400     30 R   3300   40 R       0      0          0    0    270  20  115  0 1
12      40    13750   223 R         9750  235 R   4350  30 R   2350     27 R   3150   25 R       0      0          0    0    280  18  116  0 1
12     100    13550   225 R         9600  238 R   4350  20 R   1900     28 R   3100    7 R       0      0          0    0    290  18  109  0 1
12     120    13900   230 R         9750  242 R   4400   7 R   1200     15 R   3500  345 R       0      0          0    0    295  18  103  0 1
12     140    14400   236 R        10200  248 R   4550 354 R   1200      5 R   3800  327 R       0      0          0    0    290  22  107  0 1
12     200    12100   230 R         7250  245 R   5250  19 R   2250     65 R   3900  358 R       0      0          0    0    120  22  289  0 1
12     220    12000   227 R         7000  242 R   5200  23 R      0      0     4000  356 R       0      0          0    0    120  22  298  0 1
12     240    11700   228 R         6500  245 R   5150  20 R      0      0     4300  350 R       0      0          0    0    110  20  289  0 1
12     300    11750   231 R         6250  249 R   5300  19 R      0      0     4150  341 R       0      0          0    0    110  20  288  0 1
12     320    11850   234 R         5750  254 R   5200  14 R   3650     80 R   4250  338 R       0      0          0    0    120  14  275  0 1
12     340    11550   234 R         5350  258 R   5150  14 R   3800     88 R   4200  333 R       0      0          0    0    110  14  283  0 1
12     400    11750   234 R         5400  262 R   5500  15 R   3950     88 R   4300  330 R       0      0          0    0     90  18  290  0 1
12     420    11550   233 R         5000  267 R   4700  15 R   3900     88 R   4350  327 R       0      0          0    0     90  18  287  0 1
12     440    11250   234 R         4790  269 R   4800  14 R   3200     92 R   4350  324 R       0      0          0    0    105  20  239  0 1
12     500    10900   234 R         4200  277 R   4350  14 R   2150     91 R   4200  321 R       0      0          0    0    105  20  285  0 1
12     520    10700   234 R         3600  284 R   4750  14 R   2300    100 R   4300  318 R       0      0          0    0     95  20  294  0 1
12     540    10100   234 R         3800  291 R   4450  16 R   1400     94 R   4500  315 R       0      0          0    0     95  20  296  0 1
12     600     9900   234 R         3900  300 R   4900  18 R   1000     98 R   4600  314 R       0      0          0    0     96  18  298  0 1
12     620     9500   232 R         3790  308 R   5300  18 R   1100     92 R   5350  310 R       0      0          0    0     90  16  302  0 1
12     640     9200   232 R         3500  317 R   5500  19 R   1200     96 R   5500  309 R       0      0          0    0    110  20  295  0 1
12     700     9000   231 R         4050  326 R   5300  21 R   1000     95 R   5650  306 R       0      0          0    0     90  20  290  0 1
12     720     8650   231 R         4150  334 R   5950  20 R   1550    100 R   6250  307 R       0      0          0    0    100  18  295  0 1
12     740     8500   231 R         3650  327 R   6350  26 R      0      0     7300  315 R       0      0          0    0    110  18  293  0 1
```

(continued)

```
12    800    7250  217 R    4700  10 R    7300  38 R    4900  99 R    5300 311 R   0   0   0   0   105 16  300  0  1
12    820    7150  215 R    4950  14 R    7400  40 R    5600  97 R    5300 310 R   0   0   0   0     0  0    0  0  1
12    840    6150  210 R    6100  23 R    8500  42 R   14750  94 R    5300 321 R   0   0   0   0   290 16  112  0  1
12    900    7800  231 R    5950 358 R    7100  23 R   12250  93 R    5300 305 R   0   0   0   0   325 20   95  5  1
12    920   12050  248 R    8800 319 R    7550 337 R    7150  95 R   13750 292 R   0   0   0   0   330 24   95 10  1
12    940   18050  256 R   14000 302 R   12350 336 R       0   0     23700 285 R   0   0   0   0   315 24   95  3  1
12   1000   20250  251 R   16050 301 R   13750 303 R       0   0     22850 283 R   0   0   0   0   250 20  154  0  1
12   1020   20400  253 R   15330 297 R   13000 300 R       0   0     22100 279 R   0   0   0   0   105 18  251  0  1
12   1040   17150  245 R   11150 300 R    8750 305 R       0   0     19150 276 R   0   0   0   0    55 12  288  8  1
12   1100   13150  235 R    7350 310 R    5150 334 R       0   0         0   0     0   0   0   0    90 10  271  5  1
12   1120    9900  216 R    5700   5 R    4900  32 R       0   0     10300 276 R   0   0   0   0    95 14  295  1  1
12   1150    9100  177 R    8650  58 R    9400  73 R    7050 104 R    4000 265 R   0   0   0   0   120 16  310  0  1
12   1210    9200  177 R    9150  57 R    9600  73 R    7250 107 R    4250 257 R   0   0   0   0   110 18  305  0  1
12   1220    9250  174 R    9300  57 R    9700  73 R    7700 106 R    4250 258 R   0   0   0   0   100 19  293  0  1
12   1240    9050  173 R    9950  57 R   10150  74 R    8300 108 R    4450 265 R   0   0   0   0   100 19  297  0  1
12   1300    9050  170 R   10850  56 R   10450  73 R    8650 109 R    4450 270 R   0   0   0   0   100 18  302  0  1
12   1320    9050  168 R   11400  54 R   10800  72 R    9050 107 R    4650 268 R   0   0   0   0   100 18  304  0  1
12   1340    8900  166 R   12200  54 R   10950  71 R    9700 110 R    4550 268 R   0   0   0   0   110 20  306  0  1
12   1400    9000  163 R   12750  55 R   11300  71 R    9600 107 R    4600 270 R   0   0   0   0   110 18  304  0  1
12   1420    8600  162 R   13400  53 R   11450  70 R   10350 110 R    4700 268 R   0   0   0   0   120 18  306  0  1
12   1440    8750  158 R   14250  53 R   11600  70 R   10700 110 R    4800 270 R   0   0   0   0   110 17  314  0  1
12   1500    8500  156 R   14950  53 R   11950  70 R   10750 109 R    4800 270 R   0   0   0   0   110 14  317  0  1
12   1520    8450  155 R   15350  52 R   12250  67 R   11000 110 R    5050 272 R   0   0   0   0   110 14  317  0  1
12   1540    8300  152 R   16200  52 R   12200  65 R   11300 111 R    5000 274 R   0   0   0   0   105 14  314  0  1
12   1600    8250  149 R   16050  51 R   12200  64 R   11250 111 R    4900 275 R   0   0   0   0   110 10  305  0  1
12   1620    8250  148 R   16500  51 R   12100  66 R   10800 114 R    5250 273 R   0   0   0   0   280 10  159  0  1
12   1640    7650  145 R   16900  49 R   12200  61 R    9950 109 R    5900 281 R   0   0   0   0   290 14  154  0  1
12   1700    7150  142 R   17300  47 R   12500  55 R    9200 109 R        0   0     0   0   0   0   300 12  165  0  1
12   1720    6700  139 R   18500  46 R   12800  53 R    9300 105 R    6700 285 R   0   0   0   0   290 14  154  0  1
12   1740    6800  135 R   19300  45 R   13900  51 R    9000 102 R    6700 292 R   0   0   0   0   285 10  200  0  1
12   1800    6700  128 R   20100  45 R   14500  50 R    8500  98 R    6700 295 R   0   0   0   0   295 10  172  0  1
12   1820    6500  126 R   20900  43 R   14700  47 R    8250  94 R    7700 298 R   0   0   0   0   315  8  160  0  1
12   1840    6050  119 R   21000  43 R   15100  44 R    8600  87 R    8150 300 R   0   0   0   0   290  4  148  0  1
12   1940    8100  201 R   14150  30 R    8150  15 R       0   0         0   0     0   0   0   0     0  8   10 10  2
12   2010   16850  198 R    6350  53 R       0   0        0   0         0   0     0   0   0   0     0  0  281  0  1
12   2110   22650  208 R       0   0        0   0        0   0         0   0     0   0   0   0   300 12   98  0  1
12   2300   17900  112 R       0   0        0   0        0   0         0   0     0   0   0   0   300 10  141 10  1

         74 OBSERVATIONS                   EMSARF 9/70         RUN 3

13    140    8400  338 R    4600 240 R    3300 221 R    4750 265 R    5050 251 R   0   0   0   0   315 13   33 12  1
13    200    7150  325 R    5600 229 R    5700 215 R    6100 247 R    5800 236 R   0   0   0   0   250  4   44  0  1
13    220    7250  323 R    6850 232 R    5650 215 R    6150 246 R    6900 236 R   0   0   0   0   180  2  133  0  1
13    240    7450  318 R    6950 233 R    5550 216 R    6950 244 R    6950 233 R   0   0   0   0   180  1  135  0  1
13    300    7750  313 R    7400 237 R    6250 219 R    6300 245 R    7500 235 R   0   0   0   0   140  2  137  0  1
13    320    8250  313 R    7800 242 R    6050 226 R    6250 248 R    7300 237 R   0   0   0   0   210  1   90  0  1
13    340    8500  314 R    8150 242 R    6200 224 R    6650 247 R    7600 234 R   0   0   0   0   270  0  103  0  1
13    400    8600  314 R    8750 244 R    6200 229 R    6550 245 R    7700 235 R   0   0   0   0   270  0  115  0  1
13    420    8850  313 R    8500 244 R    6400 230 R    6900 244 R    7800 237 R   0   0   0   0   280  0  113  0  1
13    440    9100  313 R    8500 248 R    6300 228 R    6900 245 R    8100 238 R   0   0   0   0   280  2  105  0  1
13    500    9100  313 R    8500 248 R    6300 234 R    7300 245 R    8350 235 R   0   0   0   0   280  4  117  0  1
13    520    8900  311 R    8800 246 R    6300 236 R    7350 245 R    8500 237 R   0   0   0   0   280  3  113  0  1
13    540    9050  312 R    9050 246 R    6450 234 R    7850 244 R    9050 237 R   0   0   0   0   240  8  103  0  1
13    600    8950  313 R    9100 244 R    6800 233 R    7900 240 R    9500 235 R   0   0   0   0   250 10   89  0  1
13    620    9050  312 R    9350 245 R    6900 232 R    8350 240 R    9850 235 R   0   0   0   0   245  8   85  0  1
13    640    9000  313 R    9700 245 R    7000 235 R    8700 238 R   10350 231 R   0   0   0   0   250  9   85  0  1
13    700    9050  313 R    9950 243 R    7550 233 R    9300 235 R   11800 233 R   0   0   0   0   240 11   70  0  1
13    720    8950  314 R   10000 245 R    7700 233 R    9750 235 R   11700 230 R   0   0   0   0   250 10   78  0  1
```

NOTE1*** THE FIGURES 999 IN THE DROGUE OR DRIFT OBJECT BEARING IS A SPECIAL
CODE USED IN SOME CASES DURING DATA PROCESSING TO INDICATE MISSING DATA.

ABREVIATIONS

WDC= WIND DATA CODE
CD1= CURRENT DROGUE 1
CD2= CURRENT DROGUE 2
HOW= HOW BEARINGS WERE OBTAINED
R= RADAR
V= VISUAL
A= ALONGSIDE

NOTE2*** WIND DATA CODE EXPLAINATION**
0= RELATIVE WIND RECORDED IN DEGREES TRUE
1= RELATIVE WIND RECORDED RELATIVE TO SHIP HEAD
2= QUESTIONABLE WIND DATA
3= NO WIND DATA RECORDED
4= WIND RECORDED IN DEGREES TRUE

		REFERENCE		H O	CD-1		H O	7-MAN RAFT		H O	16FT BOAT		H O	18FT BOAT		H O	30FT BOAT		H O	CD-2		H O	REL. WIND		SHIP		W D
DAY	TIME(Z)	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	DIR	SPD	CRS	SPD	C
13	740	8950	314	R	10400	247	R	8300	232	R	10400	233	R	12050	229	R	0	0		0	0		240	8	95	0	1
13	800	9150	315	R	10800	248	R	8750	233	R	11350	233	R	12750	235	R	0	0		0	0		250	10	91	0	1
13	820	9300	317	R	11250	246	R	9200	232	R	12150	230	R	13350	232	R	0	0		0	0		245	12	93	0	1
13	840	9250	316	R	11500	246	R	9850	232	R	12900	229	R	13950	230	R	0	0		0	0		250	12	94	0	1
13	900	9300	315	R	11850	246	R	10450	230	R	12550	227	R	14400	230	R	0	0		0	0		250	12	95	0	1
13	920	9300	317	R	12150	246	R	15900	229	R	14200	225	R	15000	228	R	0	0		0	0		275	10	93	0	1
13	940	9200	317	R	12250	247	R	11300	229	R	14750	225	R	15450	228	R	0	0		0	0		280	12	95	0	1
13	1000	7500	338	R	9300	234	R	9500	207	R	13100	206	R	13300	205	R	0	0		0	0		280	12	94	0	1
13	1020	9050	17	R	4500	211	R	7200	174	R	11750	174	R	12250	165	R	0	0		0	0		280	12	95	0	1
13	1040	9650	20	R	4200	217	R	7450	172	R	11850	170	R	11200	184	R	0	0		0	0		90	8	265	0	1
13	1100	10400	21	R	3650	204	R	7650	165	R	11950	165	R	11250	179	R	0	0		0	0		90	8	258	0	1
13	1120	11250	25	R	3150	200	R	7700	160	R	12100	160	R	11300	176	R	0	0		0	0		90	8	258	0	1
13	1140	11900	25	R	3000	197	R	8300	155	R	12250	156	R	10900	174	R	0	0		0	0		90	8	0	0	1
13	1200	12800	27	R	2500	191	R	8300	152	R	27900	167	R	10600	168	R	0	0		0	0		90	10	265	0	1
13	1220	14600	23	R	500	164	R	6950	137	R	25650	155	R	8950	156	R	0	0		0	0		90	10	180	0	1
13	1240	20350	14	R	6900	354	R	3550	69	R	2350	132	R	3300	137	R	0	0		0	0		90	10	0	0	1

52 OBSERVATIONS EVSARR 9/79 RUN 4

13	1830	6200	231	R	17800	194	R	8250	294	R	0	0		9350	291	R	0	0		0	0		285	10	120	0	1
13	1840	6050	234	R	17250	194	R	8450	291	R	0	0		9400	291	R	0	0		0	0		265	9	136	0	1
13	1900	5650	237	R	16000	193	R	8550	294	R	0	0		9600	290	R	0	0		0	0		255	9	133	0	1
13	1920	5350	238	R	15200	192	R	8600	298	R	0	0		9650	290	R	0	0		0	0		260	10	91	0	1
13	1940	5150	245	R	14400	191	R	8600	300	R	0	0		9950	293	R	0	0		0	0		275	10	98	0	1
13	2000	4650	247	R	13600	186	R	8550	304	R	0	0		9650	293	R	0	0		0	0		245	10	114	0	1
13	2020	4400	247	R	12750	184	R	8150	302	R	0	0		9400	290	R	0	0		0	0		250	10	92	0	1
13	2040	4250	248	R	11700	178	R	7600	300	R	0	0		9200	285	R	0	0		0	0		270	15	90	0	1
13	2100	4000	250	R	11200	172	R	7600	298	R	0	0		9400	283	R	0	0		0	0		280	14	93	0	1
13	2120	4100	252	R	10450	168	R	8050	294	R	0	0		10100	280	R	0	0		0	0		285	14	89	0	1
13	2140	4200	269	R	9900	162	R	8600	292	R	0	0		10900	277	R	0	0		0	0		285	14	86	0	1
13	2200	4600	265	R	9050	155	R	9500	290	R	0	0		11700	276	R	0	0		0	0		290	16	86	0	1
13	2220	4950	270	R	8300	147	R	10100	287	R	0	0		12550	271	R	0	0		0	0		285	16	98	0	1
13	2240	5600	272	R	7800	137	R	10900	285	R	0	0		13250	274	R	0	0		0	0		285	16	98	0	1
13	2300	6450	279	R	7600	126	R	11750	284	R	0	0		14800	275	R	0	0		0	0		295	14	93	0	1
13	2320	7000	280	R	7300	115	R	12750	287	R	0	0		15850	275	R	0	0		0	0		290	0	0	0	1
13	2340	11300	103	R	1800	95	R	13550	280	R	0	0		17950	264	R	0	0		0	0		0	0	0	0	1
14	200	12300	273	R	0	0		17250	270	R	0	0		21050	270	R	0	0		0	0		0	0	0	0	1
14	220	6500	280	R	0	0		11050	274	R	0	0		16400	274	R	0	0		0	0		0	0	0	0	1
14	240	3800	358	R	0	0		5250	295	R	0	0		13950	284	R	0	0		0	0		0	0	0	0	1
14	300	8050	45	R	0	0		4200	26	R	0	0		6300	313	R	0	0		0	0		0	0	0	0	1
14	320	13900	63	R	0	0		9450	65	R	0	0		5350	29	R	0	0		0	0		0	0	0	0	1
14	400	15100	61	R	0	0		9900	71	R	0	0		5650	33	R	0	0		0	0		0	10	42	0	1
14	420	11050	44	R	5550	278	R	5100	45	R	0	0		5400	332	R	0	0		0	0		280	10	97	0	1
14	440	10700	40	R	5750	278	R	4550	41	R	0	0		5700	327	R	0	0		0	0		280	10	115	0	1
14	500	10750	37	R	5200	280	R	4400	41	R	0	0		5950	324	R	0	0		0	0		295	9	107	0	1
14	520	10650	36	R	6150	281	R	4050	35	R	0	0		6250	318	R	0	0		0	0		290	10	107	0	1

(continued)

```
14   540   10700   32 R   6600 284 R   3550  35 R   0  0   6600 314 R   0  0   0  0   270 12 128  0 1
14   600   10450   30 R   6700 284 R   3050  31 R   0  0   5700 310 R   0  0   0  0   280 10 139  0 1
14   620   10250   27 R   7050 287 R   2600  27 R   0  0   7100 307 R   0  0   0  0   270 10 130  0 1
14   640   10050   24 R   7400 287 R   2300  25 R   0  0   7400 302 R   0  0   0  0   280 10 131  0 1
14   700    6500   18 R   8450 266 R   1900 238 R   0  0   8850 277 R   0  0   0  0     0 10   0  0 1
14   720    5700   22 R   8800 258 R   2900 192 R   0  0   9400 265 R   0  0   0  0    90 10 278  0 1
14   740    5800   26 R   8500 257 R   3050 175 R   0  0   8500 260 R   0  0   0  0    75 10 285  0 1
14   800    5750   26 R   8200 255 R   3250 161 R   0  0   9550 257 R   0  0   0  0    90  6 284  0 1
14   820    5800   26 R   8050 257 R   3650 150 R   0  0   9650 257 R   0  0   0  0    90 10 291  0 1
14   840    5750   26 R   7650 258 R   4350 139 R   0  0   9750 256 R   0  0   0  0    90 10 291  0 1
14   900    5550   30 R   7400 260 R   5150 131.R   0  0   8850 253 R   0  0   0  0    85  8 293  0 1
14   920    5200   32 R   7250 259 R   5900 125 R   0  0   9000 253 R   0  0   0  0    80 10 293  0 1
14   940    4800   30 R   7250 251 R   6750 124 R   0  0   9250 251 R   0  0   0  0    80 10 293  0 1
14  1000    4350   33 R   7250 258 R   7700 121 R   0  0   9150 252 R   0  0   0  0    80 10 293  0 1
14  1020    3800   27 R   7750 259 R   8450 119 R   0  0   9250 253 R   0  0   0  0    80 10 293  0 1
14  1040    3450   24 R   7300 262 R   9100 116 R   0  0   9300 257 R   0  0   0  0    80 10 292  0 1
14  1100    3100   22 R   7250 266 R   9750 115 R   0  0   9300 254 R   0  0   0  0    80 10 292  0 1
14  1120    2700   19 R   7150 267 R  10550 114 R   0  0   9250 252 R   0  0   0  0    90 10 287  0 1
14  1140    2400   15 R   7100 270 R  11200 113 R   0  0   9300 253 R   0  0   0  0    90 10 287  0 1
14  1200    2350  263 R   9600 259 R  10950 130 R   0  0  12800 249 R   0  0   0  0   270 10 130  0 1
14  1220    2850  263 R   9600 263 R  11150 127 R   0  0  13250 249 R   0  0   0  0   270 10 130  0 1
14  1240    3500  265 R   9950 263 R  11000 125 R   0  0  13600 250 R   0  0   0  0   270 17 122  0 1
14  1300    4400  265 R   9900 267 R  10900 125 R   0  0  14200 248 R   0  0   0  0   270 18 135  0 1
14  1320    5200  267 R   9700 269 R  11050 123 R   0  0  14850 246 R   0  0   0  0   275 14 125  0 1
14  1340    6050  269 R  10450 270 R  11200 120 R   0  0  15600 250 R   0  0   0  0   270 17 131  0 1

         26 OBSERVATIONS                EVSAFF 9/70          RUN 5

14  1420   12700  275 R  15900 278 R   6700 118 R   0  0  21200 259 R   0  0   0  0   300 16 118  0 1
14  1440   17900  279 R  20850 280 R   2500 122 R   0  0  26050 265 R   0  0   0  0   300 16 118  0 1
14  1500   21700  278 R  23600 287 R      0   0     0  0      0   0     0  0   0  0    90 10 262  0 1
14  1540   13350  280 R  14200 291 R      0   0     0  0  20350 263 R   0  0   0  0    90  8 252  0 1
14  1600    7950  285 R   8300 308 R      0   0     0  0  15000 264 R   0  0   0  0    90  6 262  8 1
14  1620    3400  326 R   6300 359 R      0   0     0  0   8450 263 R   0  0   0  0    70 10 252  8 1
14  1725    4200   98 R   9300  62 R      0   0     0  0      0   0     0  0   0  0   335 22  55  8 1
14  1740    3700  179 R   4200  80 R      0   0     0  0      0   0     0  0   0  0   340 24  50  8 1
14  1800    8200  218 R   2200 203 R      0   0     0  0      0   0     0  0   0  0   330 22  60  8 1
14  1840   12900  242 R   6000 268 R   4100 318 R   0  0   5650 287 R   0  0   0  0   240  8 180  8 1
14  1900   13150  252 R   6600 286 R   6450 328 R   0  0   7050 299 R   0  0   0  0   210  8 185  8 1
14  1920   14300  251 R   6900 286 R   6000 323 R   0  0   7200 295 R   0  0   0  0    60 18 335  0 1
14  1940   15450  252 R   7750 295 R   6350 319 R   0  0   8250 293 R   0  0   0  0   240 16 151  0 1
14  2000   16700  251 R   8150 284 R   6750 311 R   0  0   9100 289 R   0  0   0  0   270 16 134  0 1
14  2020   17600  251 R   8500 285 R   7000 313 R   0  0   9700 288 R   0  0   0  0   280 14 135  0 1
14  2040   18900  249 R   8950 282 R   7450 305 R   0  0  10500 281 R   0  0   0  0   280 12 135  0 1
14  2100   20150  250 R   9450 284 R   7950 304 R   0  0  11400 280 R   0  0   0  0   260 12 139  0 1
14  2120   21350  254 R   9950 286 R   8400 304 R   0  0  12190 283 R   0  0   0  0   285 14 136  0 1
14  2140   22900  250 R  10600 285 R   9000 302 R   0  0  13000 281 R   0  0   0  0   285 14 137  0 1
14  2200   23950  250 R  11100 285 R   9650 299 R   0  0  13925 280 R   0  0   0  0   285 14 144  0 1
14  2220   26750  250 R  11700 280 R  10250 290 R   0  0  15350 275 R   0  0   0  0   230 22  10  0 2
14  2240   27550  245 R  11250 274 R   9800 279 R   0  0  15450 269 R   0  0   0  0   235 12 176  0 1
14  2300   26007  246 R   9550 282 R   8750 291 R   0  0  13825 274 R   0  0   0  0   135  6 246  9 1
14  2320   22050  245 R   6050 320 R   6300 332 R   0  0   9500 290 R   0  0   0  0   145  4 247  9 1
14  2340   20750  243 R   5050 340 R   6950 349 R   0  0   7900 295 R   0  0   0  0    75 12 336  9 1
15     0   21950  240 R   5000 340 R   5400 345 R   0  0   7800 287 R   0  0   0  0    45 22 345 10 1
```

15	440	14250	83 R	4600	158 R	5300	135 R	4100	185 R	7400	125 R	0	0	0	0	315	10	90	0	1
15	500	13700	82 R	4150	164 R	4900	136 R	3950	195 R	6850	126 R	0	0	0	0	330	10	50	0	1

NOTE1*** THE FIGURES 999 IN THE DROGUE OR DRIFT OBJECT BEARING IS A SPECIAL CODE USED IN SOME CASES DURING DATA PROCESSING TO INDICATE MISSING DATA.

NOTE2*** WIND DATA CODE EXPLAINATION**
0= RELATIVE WIND RECORDED IN DEGREES TRUE
1= RELATIVE WIND RECORDED RELATIVE TO SHIP HEAD
2= QUESTIONABLE WIND DATA
3= NO WIND DATA RECORDED
4= WIND RECORDED IN DEGREES TRUE

ABREVIATIONS

WDC= WIND DATA CODE
CD1= CURRENT DROGUE 1
CD2= CURRENT DROGUE 2
HOW= HOW BEARINGS WERE OBTAINED
R= RADAR
V= VISUAL
A= ALONGSIDE

		REFERENCE			CD-1			7-MAN RAFT			16FT BOAT			18FT BOAT			30FT BOAT			CD-2			REL. WIND		SHIP		W
DAY	TIME(Z)	RANGE	BRG	HOW	RANGE	BRG	HOW	RANGE	BRG	HOW	RANGE	BRG	HOW	RANGE	BRG	HOW	RANGE	BRG	HOW	RANGE	BRG	HOW	DIR	SPD	CRS	SPD	DC
15	520	12950	83	R	3950	165	R	4550	139	R	4350	200	R	6500	127	R	0	0		0	0		90	6	281	0	1
15	540	13400	84	R	3850	156	R	4800	132	R	4650	197	R	5800	124	R	0	0		0	0		90	6	305	0	1
15	600	13200	81	R	3600	151	R	4450	122	R	4450	205	R	6450	117	R	0	0		0	0		295	8	110	0	1
15	620	13150	85	R	3500	157	R	4250	120	R	4650	208	R	6800	117	R	0	0		0	0		250	6	137	0	1
15	640	12800	86	R	3500	149	R	4300	118	R	5150	211	R	6550	119	R	0	0		0	0		45	14	285	10	1
15	700	12550	87	R	3250	155	R	4000	119	R	5400	214	R	6350	118	R	0	0		0	0		10	8	5	0	1
15	720	12800	88	R	3450	148	R	4300	115	R	6050	209	R	6950	115	R	0	0		0	0		80	6	331	0	1
15	740	12900	89	R	3600	145	R	4600	113	R	6400	210	R	6850	114	R	0	0		0	0		120	3	297	0	1
15	800	12950	90	R	3700	140	R	4650	110	R	6350	210	R	6950	113	R	0	0		0	0		0	0	0	0	1
15	820	13300	91	R	3850	133	R	4950	106	R	6550	207	R	7300	111	R	0	0		0	0		95	6	276	0	1
15	840	13600	92	R	4100	129	R	5200	102	R	6600	205	R	7500	107	R	0	0		0	0		120	6	275	0	1
15	900	13800	94	R	4300	124	R	5600	102	R	6650	205	R	7800	108	R	0	0		0	0		130	6	275	0	1
15	920	14250	95	R	4800	118	R	6100	100	R	6700	203	R	8100	105	R	0	0		0	0		130	6	273	0	1
15	940	14700	96	R	5150	115	R	6550	98	R	6750	202	R	8500	103	R	0	0		0	0		165	6	252	0	1
15	1000	14850	97	R	5500	112	R	6750	97	R	6800	202	R	8600	103	R	0	0		0	0		160	6	254	0	1
15	1020	15000	100	R	5700	110	R	6950	96	R	6900	202	R	8750	103	R	0	0		0	0		160	6	268	0	1
15	1040	15150	98	R	6000	108	R	7200	93	R	7050	201	R	8900	101	R	0	0		0	0		100	6	319	0	1
15	1100	15300	100	R	6050	107	R	7250	93	R	7150	203	R	8850	101	R	0	0		0	0		75	4	324	0	1
15	1120	15400	103	R	6200	105	R	7500	91	R	7300	202	R	8850	100	R	0	0		0	0		80	4	320	0	1
15	1140	15400	104	R	6300	105	R	7550	93	R	7350	203	R	9000	101	R	0	0		0	0		80	4	316	0	1
15	1200	15500	104	R	6450	104	R	7700	94	R	7750	203	R	9350	101	R	0	0		0	0		90	4	319	0	1
15	1220	15850	106	R	6650	105	R	7750	95	R	8150	204	R	9325	102	R	0	0		0	0		90	4	324	0	1
15	1240	15850	107	R	6825	105	R	7850	69	R	8550	204	R	9150	102	R	0	0		0	0		80	4	320	0	1
15	1300	15900	107	R	6900	104	R	7850	97	R	8925	204	R	9150	103	R	0	0		0	0		0	0	0	0	1
15	1320	15900	109	R	6950	103	R	7900	98	R	9400	206	R	9075	104	R	0	0		0	0		85	4	325	0	1
15	1340	15825	110	R	7050	102	R	7825	99	R	9550	205	R	9350	106	R	0	0		0	0		90	2	332	0	1
15	1400	15750	111	R	7050	101	R	7750	98	R	10050	205	R	9925	107	R	0	0		0	0		75	4	346	0	1
15	1420	15750	113	R	7050	102	R	7625	100	R	10550	207	R	8650	108	R	0	0		0	0		90	4	336	0	1
15	1440	15650	112	R	6955	100	R	7675	99	R	10800	206	R	9600	109	R	0	0		0	0		110	4	330	0	1
15	1500	15600	113	R	7125	99	R	7675	98	R	11350	207	R	9475	108	R	0	0		0	0		45	4	357	0	1
15	1520	15650	114	R	7300	99	R	7600	98	R	0	0		8550	109	R	0	0		0	0		120	4	330	0	1
15	1540	15650	113	R	7500	95	R	7750	94	R	0	0		8650	106	R	0	0		0	0		30	2	23	0	1
15	1600	15250	115	R	0	0		0	0		0	0		8550	108	R	0	0		0	0		90	2	335	0	1
15	1620	15450	113	R	8050	91	R	7500	91	R	12950	206	R	8350	105	R	0	0		0	0		90	2	340	0	1
15	1640	15450	113	R	8200	91	R	7850	90	R	13400	209	R	8200	104	R	0	0		0	0		65	0	25	0	1
15	1725	16300	104	R	10350	76	R	9600	75	R	10500	207	R	9400	85	R	0	0		0	0		350	16	209	12	1
15	1750	17150	94	R	13150	64	R	12500	62	R	0	0		11950	69	R	0	0		0	0		350	16	209	12	1
15	1800	15900	108	R	10200	78	R	9500	76	R	0	0		9350	93	R	0	0		0	0		25	8	85	12	2
15	1840	15800	121	R	8950	90	R	7850	101	R	0	0		8400	111	R	0	0		0	0		120	2	46	0	1
15	1900	15800	120	R	9100	101	R	7850	101	R	7400	124	R	8400	110	R	0	0		0	0		180	0	75	0	1
15	1920	15300	121	R	8450	99	R	7250	100	R	6400	126	R	7700	108	R	0	0		0	0		0	0	0	0	1
15	1940	15750	122	R	8750	97	R	7300	100	R	6750	126	R	7900	109	R	0	0		0	0		0	0	0	0	1
15	2000	15500	124	R	8450	104	R	7100	103	R	6450	128	R	7750	110	R	0	0		0	0		0	0	0	0	1
15	2020	15450	124	R	8750	105	R	6900	104	R	6350	129	R	7850	110	R	0	0		0	0		220	0	357	0	1
15	2040	15750	124	R	8700	105	R	6800	101	R	6000	128	R	7800	110	R	0	0		0	0		0	0	54	0	1
15	2100	15650	125	R	8650	106	R	7100	102	R	5900	128	R	7950	111	R	0	0		0	0		0	0	54	0	1
15	2120	15750	125	R	8900	108	R	6650	103	R	5450	129	R	7900	111	R	0	0		0	0		0	0	13	0	1

(continued)

```
15   2140   15850 124 R   8850 105 R   7100 103 R   5700 128 R   7700 108 R     0   0     0   0     0  0   13  0 1
15   2200   15750 124 R   8950 107 R   6700 101 R   5500 127 R   7850 110 R     0   0     0   0   150  2   33  0 1
15   2220   16150 123 R   8550 107 R   6550 101 R   5200 124 R   7600 104 R     0   0     0   0   120  2   67  0 1
15   2240   16400 124 R   8750 107 R   6600  99 R   5100 125 R   7500 110 R     0   0     0   0   135  2   48  0 1
15   2300   16550 123 R   8750 108 R   6500  98 R   5100 122 R   7250 108 R     0   0     0   0   135  2   48  0 1
15   2320   17000 123 R   8900 107 R   6450  97 R   5100 119 R   7600 110 R     0   0     0   0     0  0    0  0 1
15   2340   17300 126 R   8700 109 R   6600  97 R   5000 118 R   7200 107 R     0   0     0   0   120  4   55  0 1
16      0   17750 126 R   8700 109 R   6550  98 R   5100 114 R   7100 105 R     0   0     0   0    90  4   71  0 1
16     20   17900 125 R   8700 110 R   6350  98 R   5100 113 R   7100 105 R     0   0     0   0    70  2   83  0 1
16     40   18100 126 R   8550 110 R   6250  98 R   4900 111 R   7000 105 R     0   0     0   0   105  2   40  0 1
16    100   18500 125 R   8600 111 R   6200  97 R   4900 110 R   7000 105 R     0   0     0   0   105  1   45  0 1
16    120   18750 125 R   8650 113 R   6100  98 R   4850 110 R   6900 116 R     0   0     0   0   105  1   20  0 1
16    140   18950 127 R   8600 117 R   6000  93 R   4750 108 R   6800 105 R     0   0     0   0   160  1    5  0 1
16    200   14600 128 R   7700 119 R      0   0       0   0       0   0        0   0     0   0     0 12  130 10 1
16    220    7350 135 R   6000 316 R   7500 321 R   8350 313 R   6500 322 R     0   0     0   0     0  6  130 10 2
16    240    6300 136 R   5150 316 R   8400 321 R   8700 314 R   7350 320 R     0   0     0   0     0  4  166  0 1
16    300    6350 140 R   5300 318 R   8600 322 R   8750 318 R   7700 324 R     0   0     0   0   100  6   72  0 1
16    320    6500 143 R   5250 319 R   8750 324 R   8750 320 R   7700 326 R     0   0     0   0   100  4  190  0 2
16    340    6550 145 R   5400 318 R   8700 323 R   8650 321 R   7950 327 R     0   0     0   0    90  4   75  0 1
16    400    6500 147 R   5350 318 R   8775 325 R   8775 325 R   8025 330 R     0   0     0   0    95  3   79  0 1
16    420    6450 150 R   5375 319 R   8875 326 R   8875 327 R   8200 331 R     0   0     0   0    95  2   95  1 1
16    440    6450 153 R   5450 318 R   9100 327 R   9150 329 R   8425 332 R     0   0     0   0    95  2   77  0 1
16    500    6275 155 R   5600 319 R   9175 327 R   9125 330 R   8675 333 R     0   0     0   0    95  3   57  0 1
16    520    6175 157 R   5575 319 R   9450 328 R   9375 331 R   8925 334 R     0   0     0   0   100  6   80  0 1
16    540    6150 159 R   5500 319 R   9550 328 R   9550 334 R   9050 335 R     0   0     0   0   100  4   98  0 1
16    600    6025 163 R   5025 320 R   9575 330 R   9550 335 R   9300 335 R     0   0     0   0    90  6   99  0 1
16    620    5900 166 R   5475 319 R   9625 330 R   9750 338 R   9375 338 R     0   0     0   0    95  6   85  0 1
16    640    5825 167 R   5450 317 R   9350 329 R   9800 339 R   9575 339 R     0   0     0   0    90  4   91  0 1
16    700    5650 169 R   5250 317 R   9725 332 R   9675 343 R   9550 342 R     0   0     0   0    95  6   88  0 1
16    720    5625 171 R   5100 316 R   9450 333 R   9400 344 R   9250 343 R     0   0     0   0   120  6   88  0 1
16    740    5450 168 R   5250 307 R   9800 329 R   9450 338 R   9450 338 R     0   0     0   0   110  8  127  0 1
16    800    5300 170 R   5150 304 R   9500 329 R   9350 337 R   9350 337 R     0   0     0   0    90  6  151  0 1
16    820    5100 174 R   4950 306 R   9450 325 R   9300 336 R   9300 334 R     0   0     0   0    90  6  151  0 1
16    840    4800 176 R   4950 303 R   9300 320 R   9150 342 R   9250 334 R     0   0     0   0   105  6  149  0 1
16    900    4600 180 R   5100 299 R   9450 328 R   9050 342 R   9250 337 R     0   0     0   0    90  4  164  0 1
16    920    4300 182 R   5300 299 R   9550 330 R   8950 342 R   9250 338 R     0   0     0   0    90  4  154  0 1
16    940    4000 184 R   5450 299 R   9150 330 R   9000 340 R   9150 335 R     0   0     0   0    90  4  159  0 1
16   1000    3700 187 R   5600 298 R   9300 330 R   8750 342 R   9100 341 R     0   0     0   0    90  4  163  0 1
16   1020    3450 189 R   5550 295 R   9450 330 R   8550 344 R   8950 341 R     0   0     0   0    90  4  157  0 1
16   1040    3700 187 R   5750 295 R   8950 333 R   8300 348 R   8750 345 R     0   0     0   0    90  4  157  0 1
16   1100    3100 186 R   5800 295 R   9000 333 R   7900 344 R   8500 342 R     0   0     0   0    95  5  150  0 1
16   1120    2950 186 R   6300 291 R   8250 332 R   7650 345 R   8200 341 R     0   0     0   0   105  8  165  0 1
16   1140    2800 189 R   6250 292 R   8400 335 R   7300 345 R   7800 345 R     0   0     0   0    90  6  178  0 1
16   1200    3050 191 R   6600 291 R   7950 335 R   7300 351 R   7750 346 R     0   0     0   0    90  4  180  0 1
15   1220    2950 193 R   6650 292 R   7600 334 R   6700 351 R   7650 345 R     0   0     0   0    90  4  188  0 1
16   1240    3000 197 R   7050 292 R   7550 332 R   6750 345 R   7200 345 R     0   0     0   0    90  4  190  0 1
16   1300    3000 197 R   7150 291 R   7150 329 R   6350 352 R   6550 346 R     0   0     0   0    90  4  190  0 1
16   1320    3100 200 R   7300 293 R   6950 327 R   5950 349 R   6250 345 R     0   0     0   0    90  4  190  0 1
16   1340    3050 203 R   7600 292 R   6850 325 R   5550 349 R   5800 342 R     0   0     0   0    90  4  190  0 1
16   1400    3450 208 R   7700 290 R   6850 323 R   6100 347 R   5650 338 R     0   0     0   0    60  4  216  0 1
16   1420    3500 208 R   7350 290 R   6400 320 R   6300 345 R   5450 335 R     0   0     0   0    90  4  195  0 1
16   1440    3950 217 R   8150 290 R   6350 317 R   6500 344 R   5400 333 R     0   0     0   0    90  4  191  0 1
16   1500    4100 221 R   8300 290 R   6200 313 R   6750 344 R   5450 330 R     0   0     0   0    90  4  233  0 1
16   1520    4450 225 R   8700 291 R   6300 309 R   7100 343 R   5600 330 R     0   0     0   0    90  4  203  0 1
16   1540    5000 227 R   9000 290 R   6250 307 R   7050 344 R   5450 330 R     0   0     0   0    90  2  234  0 1
16   1600    5650 231 R   9300 290 R   6250 313 R   7100 342 R   5300 327 R     0   0     0   0    95  3  199  0 1
16   1620    6400 235 R   9550 290 R   6400 300 R   7200 342 R   5300 326 R     0   0     0   0    75  2  234  0 1
16   1640    7000 238 R  10000 290 R   6500 295 R   7300 340 R   5100 323 R     0   0     0   0    75  2  269  0 1
```

NOTE1*** THE FIGURES 999 IN THE DROGUE OR DRIFT OBJECT BEARING IS A SPECIAL CODE USED IN SOME CASES DURING DATA PROCESSING TO INDICATE MISSING DATA.

NOTE2*** WIND DATA CODE EXPLAINATION**

0= RELATIVE WIND RECORDED IN DEGREES TRUE
1= RELATIVE WIND RECORDED RELATIVE TO SHIP HEAD
2= QUESTIONABLE WIND DATA
3= NO WIND DATA RECORDED
4= WIND RECORDED IN DEGREES TRUE

ABBREVIATIONS

WDC= WIND DATA CODE
CD1= CURRENT DROGUE 1
CD2= CURRENT DROGUE 2
HOW= HOW BEARINGS WERE OBTAINED
R= RADAR
V= VISUAL
A= ALONGSIDE

		REFERENCE			CD-1			7-MAN RAFT			16FT BOAT			18FT BOAT			30FT BOAT			CD-2			REL. WIND		SHIP		
DAY	TIME(Z)	RANGE	BRG	HOW	RANGE	BRG	HOW	RANGE	BRG	HOW	RANGE	BRG	HOW	RANGE	BRG	HOW	RANGE	BRG	HOW	RANGE	BRG	HOW	DIR	SPD	CRS	SPD	WDC
16	1700	7800	243	R	10400	289	R	6700	293	R	7450	339	R	5100	321	R	0	0		0	0		90	2	190	0	1
16	1720	8600	245	R	10700	289	R	6900	291	R	7600	336	R	5050	319	R	0	0		0	0		100	4	158	0	1
16	1740	9350	245	R	11000	286	R	6950	288	R	7650	335	R	5100	316	R	0	0		0	0		90	2	174	0	1
16	1800	10350	249	R	11450	286	R	7250	287	R	7700	334	R	4850	314	R	0	0		0	0		90	2	170	0	1
16	1820	11200	250	R	11900	285	R	7400	286	R	7750	332	R	4550	311	R	0	0		0	0		135	2	147	0	1
16	1840	12100	251	R	12200	284	R	7400	285	R	7750	331	R	4450	309	R	0	0		0	0		125	5	155	0	1
16	1900	12950	251	R	12400	283	R	7350	283	R	7750	329	R	4300	305	R	0	0		0	0		110	4	185	0	1
16	1920	13550	253	R	12600	282	R	7250	283	R	7700	328	R	4050	301	R	0	0		0	0		105	4	193	0	1
16	1940	14250	254	R	12700	281	R	7050	281	R	7450	326	R	3800	300	R	0	0		0	0		120	3	173	0	1
16	2000	14800	254	R	13250	282	R	6850	280	R	7600	326	R	3550	293	R	0	0		0	0		105	4	157	0	1
16	2020	15450	254	R	12900	279	R	6700	277	R	7350	321	R	3400	286	R	0	0		0	0		110	4	152	0	1
16	2040	16300	255	R	12855	275	R	6700	273	R	6650	318	R	3300	280	R	0	0		0	0		120	4	135	0	1
16	2100	16925	254	R	12950	275	R	6675	269	R	6850	314	R	3400	273	R	0	0		0	0		110	4	140	0	1
16	2120	17650	252	R	13150	271	R	6750	266	R	6700	307	R	3550	266	R	0	0		0	0		85	3	121	0	1
16	2140	18450	251	R	13100	269	R	7000	261	R	6800	303	R	3650	263	R	0	0		0	0		90	2	177	0	1
16	2200	15900	246	R	10300	266	R	3800	252	R	4800	320	R	0	0		0	0		0	0		0	0	0	0	1
16	2220	14750	247	R	8150	267	R	2000	251	R	4400	347	R	0	0		0	0		0	0		0	16	247	9	1
16	2240	14200	241	R	6525	259	R	0	0		3375	11	R	0	0		0	0		0	0		320	8	16	9	1

(continued)

```
          44 OBSERVATIONS              EVSARR 9/70          RUN 6

17   340    5150  133 R   6900  244 R    5200  275 R    5350  257 R   4850  224 R    0    0             0    0   295 10  278  0 1
17   400    5350  137 R   6950  247 R    5100  273 R    5100  261 R   4750  220 R    0    0             0    0   265  8  335  0 1
17   420    5250  145 R   6950  241 R    5250  270 R    5950  260 R   4500  214 R    0    0             0    0   250 10  310  0 1
17   440    5350  153 R   7500  241 R    5400  269 R    5400  260 R   4250  208 R    0    0             0    0   270 10  297  0 1
17   500    5650  160 R   7600  240 R    5600  268 R    5900  260 R   4150  201 R    0    0             0    0   275 10  302  0 1
17   520    6250  167 R   8200  236 R    5550  266 R    6000  261 R   4350  192 R    0    0             0    0   270 10  309  0 1
17   540    6550  174 R   8500  235 R    5750  263 R    6200  261 R   4800  188 R    0    0             0    0   270 10  314  0 1
17   600    7150  177 R   9150  235 R    5750  260 R    6450  260 R   4950  185 R    0    0             0    0   280 10  308  0 1
17   620    7550  183 R   9450  231 R    5800  254 R    6700  259 R   5500  180 R    0    0             0    0   282  9  312  0 1
17   640    8400  188 R   9800  231 R    6000  251 R    6900  257 R   5750  178 R    0    0             0    0   270 10  313  0 1
17   700    8900  192 R  10500  230 R    6200  247 R    7100  255 R   6350  176 R    0    0             0    0   270 10  324  0 1
17   720    9950  197 R  11050  230 R    6300  245 R    7300  255 R   5800  175 R    0    0             0    0   275 10  332  0 1
17   740   10600  202 R  11600  231 R    6750  242 R    7500  251 R   6950  176 R    0    0             0    0   280 10  333  0 1
17   800   11500  206 R  12350  232 R    7200  242 R    8250  252 R   7050  176 R    0    0             0    0   270  7  348  0 1
17   820   12200  210 R  12950  233 R    7450  242 R    8450  251 R   7000  177 R    0    0             0    0   270  7  348  0 1
17   840   13000  213 R  13500  234 R    7850  241 R    8500  251 R   6950  177 R    0    0             0    0   270  8  350  0 1
17   900   13550  215 R  13900  235 R    8050  240 R    8900  250 R   6950  175 R    0    0             0    0   270  7  348  0 1
17   920   14550  217 R  14550  235 R    8350  240 R    9100  250 R   7000  173 R    0    0             0    0   270  8  353  0 1
17   940   15200  220 R  15000  238 R    8500  240 R    9050  251 R   7100  170 R    0    0             0    0   270  8    0  0 1
17  1000   16100  222 R  15550  239 R    8850  240 R    9300  250 R   7250  169 R    0    0             0    0   270  8    2  0 1
17  1020   17100  223 R  15800  240 R    9050  239 R    9400  250 R   7300  168 R    0    0             0    0   280  9  359  0 1
17  1040   18000  224 R  15900  242 R    9300  240 R    9600  251 R   7300  167 R    0    0             0    0   265  9    7  0 1
17  1100   18950  225 R  17350  241 R    9950  237 R    9900  250 R   7300  164 R    0    0             0    0   270  8    4  0 1
17  1120   20150  226 R  18000  242 R    9950  237 R   10300  250 R   7350  162 R    0    0             0    0   280  8    1  0 1
17  1140   20650  228 R  18650  244 R   10400  238 R   10300  250 R   7400  159 R    0    0             0    0   260 10   16  0 1

17  1200   21550  230 R  19100  245 R   10550  239 R   10630  252 R   7400  158 R    0    0             0    0   270 10   23  0 1
17  1220   22300  231 R  19575  247 R   10575  241 R   10575  254 R   7550  150 R    0    0             0    0   110  4  150  0 1
17  1240   22950  246 R  21450  266 R   12200  272 R   13400  282 R   1350  148 R    0    0             0    0     0  0    0  0 1
17  1300   22050  249 R  20700  269 R   11025  279 R   12500  290 R      0    0      0    0             0    0    35 20  250  9 1
17  1320   17150  247 R  15700  275 R    5750  330 R    8100  314 R      0    0      0    0             0    0    25 20  264  9 1
17  1340   13350  238 R  10750  277 R    3100    4 R    5950  356 R      0    0      0    0             0    0    30 12  254  0 1
17  1400   13550  238 R  11400  295 R    6100    9 R    8950    3 R   3200   14 R    0    0             0    0    30 10  252  0 1
17  1420   13500  252 R  11950  294 R    6300    8 R    9550    3 R   3650   17 R    0    0             0    0    30 18  254 10 1
17  1440   12500  247 R   9950  297 R    6550   25 R    9300   16 R   4650   47 R    0    0          2400   92 R 290  8   13  0 1
17  1500   13775  248 R  10500  295 R    6150   24 R    8900   17 R   4750   48 R    0    0          2550   97 R 270  6   44  0 1
17  1520   15000  249 R  10900  294 R    5800   24 R    8650   17 R   4650   51 R    0    0          2650   96 R 270  7   51  0 1
17  1540   16150  248 R  11300  293 R    5400   25 R    8600   17 R   4800   52 R    0    0          2950   96 R 240  6   65  0 1
17  1600   17300  248 R  11600  292 R    5050   25 R    8500   16 R   4750   53 R    0    0          3150   96 R 235  4   62  0 1
17  1620   19500  247 R  12050  289 R    4600   21 R    8350   15 R   4600   53 R    0    0          3300   96 R 273  3   59  0 1
17  1640   19600  247 R  12550  287 R    4350   17 R    8250   14 R   4550   53 R    0    0          3300   95 R 255  2   72  0 1
17  1700   20500  247 R  13100  287 R    4100   12 R    8100   13 R   4400   53 R    0    0          3350   94 R 225  3   67  0 1
17  1720   22050  246 R  13550  284 R    3950    7 R    9000   11 R   4300   50 R    0    0          3600   90 R 210  3  115  0 1
17  1740   23050  244 R  13950  281 R    3750    3 R    7800   11 R   4300   50 R    0    0          3850   90 R 150  3  171  0 1
17  1800   24150  244 R  14200  280 R    3600    1 R    7550   12 R   4350   52 R    0    0          4200   90 R 110  3  214  0 1
```

(continued)

```
         28 OBSERVATIONS          EVSAPR 9/70      RUN 7

21   2130   18400  295 R   5350 194 R   4450 178 R   4250  145 R   5300  116 R     0   0      0  0   290  3 240  0  1
21   2150   18500  294 R   5350 195 R   4350 176 R   4250  140 R   5150  117 R     0   0      0  0   290  3 240  0  1
21   2210   18650  290 R   5000 193 R   4250 175 R   4150  135 R   5350  106 R     0   0      0  0   290  3 240  0  1
21   2230   18900  290 R   5000 193 R   4100 174 R   4000  132 R   5500  102 R     0   0      0  0   290  3 240  0  1
21   2300   19000  288 R   4900 192 R   3900 172 R   3900  129 R   5700   98 R     0   0      0  0   280  3 250  0  1
21   2320   19950  286 R   4900 192 R   3650 172 R   3650  121 R   5950   91 R     0   0      0  0   280  3 230  0  1
21   2340   19650  285 R   4850 193 R   3500 172 R   3650  119 R   6200   88 R     0   0      0  0   285  3 245  0  1
22      0   20100  282 R   4900 193 R   3450 172 R   3450  114 R   6350   86 R     0   0      0  0   285  3 243  0  1
22     20   20100  282 R   4850 191 R   3350 170 R   3200  105 R   6900   82 R     0   0      0  0   285  3 243  0  1
22     40   20100  281 R   4800 191 R   3350 167 R   3350  100 R   7300   80 R     0   0      0  0   285  6 250  0  1
22    100   20500  279 R   4900 192 R   3350 167 R   3600   94 R   7800   76 R     0   0      0  0   285  6 260  0  1
22    120   20250  279 R   5150 191 R   3350 166 R   3850   88 R   8550   74 R     0   0      0  0   285  6 272  0  1
22    140   20850  278 R   5250 189 R   3350 164 R   4250   83 R   9300   75 R     0   0      0  0   280  6 270  0  1
22    200   21100  277 R   5750 187 R   3450 159 R   4350   79 R  10150   69 R     0   0      0  0   290  8 231  0  1
22    220   21250  274 R   4750 189 R   3300 161 R   4750   73 R  10800   68 R     0   0      0  0   280  8 231  0  1
22    240   21300  275 R   5950 189 R   3350 156 R   5050   67 R  11400   67 R     0   0      0  0   280  8 278  0  1
22    300   21850  273 R   6000 188 R   3350 155 R   5450   64 R  12250   64 R     0   0      0  0   285  8 283  0  1
22    320   22150  274 R   6100 190 R   3250 155 R   5950   60 R  13200   63 R     0   0      0  0   290  8 265  0  1
22    340   22100  273 R   6050 188 R   3250 149 R   6550   58 R  14450   62 R     0   0      0  0   280  9 230  0  1
22    400   22500  273 R   6550 189 R   3400 149 R   7150   52 R  14900   60 R     0   0      0  0   270  8 278  0  1
22    420   22600  272 R   6850 188 R   3350 145 R   7700   49 R  16300   58 R     0   0      0  0   280  8 263  0  1
22    440   22750  270 R   7150 188 R   3700 143 R   8150   47 R  17100   58 R     0   0      0  0   285  8 290  0  1
22    500   22800  270 R   7500 186 R   3900 142 R   8850   45 R  18100   58 R     0   0      0  0   285  7 281  0  1
22    520   22850  269 R   7900 185 R   4200 143 R   9350   43 R  19000   58 R     0   0      0  0   295 10 285  0  1
22    540   23000  268 R   8250 185 R   4400 143 R   9800   40 R  19450   57 R     0   0      0  0   280 10 302  0  1
22    600   23450  267 R   9800 184 R   4800 145 R  10300   40 R  20200   57 R     0   0      0  0   285  8 305  0  1
22    620   23900  268 R   9900 190 R   5250 155 R  10000   38 R  20550   56 R     0   0      0  0    90  3  55 10  1
22    640   29850  261 R  15400 208 R   9400 203 R   4300    7 R  14600   58 R     0   0      0  0    70  2  55 10  1

         35 OBSERVATIONS          EVSAPR 9/70      RUN 8

22   1420   17400   65 R   5300 230 R   5000 251 R   5550  202 R   5300  180 R     0   0      0  0    70  6  55 12  1
22   1440   15400   59 R   7850 238 R   7250 255 R   6450  215 R   5450  200 R     0   0      0  0    90  6 107  0  1
22   1500   15300   56 R   8300 239 R   7650 255 R   6150  215 R   5300  199 R     0   0      0  0   100  8 135  0  1
22   1520   15250   58 R   8500 239 R   7850 256 R   5750  213 R   5000  197 R     0   0      0  0    95  8 135  0  1
22   1540   15250   58 R   8750 240 R   8100 257 R   5450  211 R   4700  194 R     0   0      0  0   100  8 109  0  1
22   1600   15200   57 R   8850 240 R   8300 258 R   5050  210 R   4300  192 R     0   0      0  0    90  8 104  0  1
```

NOTE1*** THE FIGURES 999 IN THE DROGUE OR DRIFT OBJECT BEARING IS A SPECIAL CODE USED IN SOME CASES DURING DATA PROCESSING TO INDICATE MISSING DATA.

NOTE2*** WIND DATA CODE EXPLAINATION**
0= RELATIVE WIND RECORDED IN DEGREES TRUE
1= RELATIVE WIND RECORDED RELATIVE TO SHIP HEAD
2= QUESTIONABLE WIND DATA
3= NO WIND DATA RECORDED
4= WIND RECORDED IN DEGREES TRUE

ABREVIATIONS

WDC= WIND DATA CODE
CD1= CURRENT DROGUE 1
CD2= CURRENT DROGUE 2
HOW= HOW BEARINGS WERE OBTAINED
R= RADAR
V= VISUAL
A= ALONGSIDE

		REFERENCE		H O	CD-1		H O	7-MAN RAFT		H O	16FT BOAT		H O	18FT BOAT		H O	30FT BOAT		H O	CD-2		H O	REL. WIND		SHIP		W D
DAY	TIME(Z)	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	DIR	SPD	CRS	SPD	C
22	1620	15300	57	R	9300	241	R	8650	259	R	4650	230	R	3950	190	R	0	0		0	0		96	10	105	0	1
22	1640	15100	56	R	9600	240	R	8800	259	R	4300	206	R	3300	185	R	0	0		0	0		95	10	107	0	1
22	1700	15050	57	R	9850	241	R	9350	259	R	4250	204	R	3430	180	R	0	0		0	0		96	6	114	0	1
22	1720	14550	56	R	10100	241	R	9300	259	R	3700	201	R	3350	180	R	0	0		0	0		96	6	114	0	1
22	1740	14850	55	R	10400	240	R	9500	258	R	3700	200	R	3050	175	R	0	0		0	0		96	8	117	0	1
22	1800	14650	55	R	10650	241	R	9400	260	R	3200	192	R	2930	164	R	0	0		0	0		90	10	118	0	1
22	1820	14350	53	R	11000	240	R	9700	260	R	2750	185	R	2750	154	R	0	0		0	0		90	10	111	0	1
22	1840	14800	53	R	11100	241	R	9800	262	R	2450	179	R	2510	140	R	0	0		0	0		96	10	120	0	1
22	1900	14850	52	R	11100	243	R	9950	263	R	2400	168	R	2700	132	R	0	0		0	0		90	10	116	0	1
22	1921	14950	50	R	11250	242	R	9850	262	R	2300	155	R	2850	123	R	0	0		0	0		100	10	117	0	1
22	1940	14550	49	R	11200	244	R	9950	264	R	2450	145	R	3100	117	R	0	0		0	0		100	8	112	0	1
22	2000	15000	48	R	11350	245	R	9850	264	R	2550	130	R	3750	109	R	0	0		0	0		90	8	124	0	1
22	2020	15050	47	R	11400	245	R	9700	265	R	3000	120	R	4200	104	R	0	0		0	0		90	7	121	0	1
22	2040	15000	49	R	11700	245	R	9500	265	R	3200	116	R	4700	101	R	0	0		0	0		90	7	116	0	1
22	2100	15100	47	R	11700	243	R	9400	265	R	3700	110	R	5100	96	R	0	0		0	0		90	6	112	0	1
22	2120	15050	46	R	12000	243	R	9400	263	R	4350	103	R	5600	91	R	0	0		0	0		90	6	114	0	1
22	2140	15000	45	R	12100	242	R	9300	263	R	4300	98	R	6300	87	R	0	0		0	0		96	5	115	0	1
22	2200	15400	45	R	12400	240	R	9300	260	R	4700	95	R	6400	85	R	0	0		0	0		100	7	95	0	1
22	2220	15100	45	R	12800	240	R	9450	260	R	5100	92	R	6900	85	R	0	0		0	0		96	6	96	0	1
22	2240	15100	45	R	13000	240	R	9650	260	R	5350	89	R	7050	83	R	0	0		0	0		100	5	106	0	1
22	2300	15200	42	R	13500	240	R	9900	260	R	5500	86	R	7350	80	R	0	0		0	0		100	6	115	0	1
22	2320	15350	42	R	14000	240	R	10200	260	R	5800	83	R	7650	79	R	0	0		0	0		96	6	96	0	1
22	2340	15450	41	R	14400	243	R	10500	260	R	6050	80	R	7925	75	R	0	0		0	0		0	0	0	0	1
23	0	15525	41	R	14650	243	R	10750	264	R	6175	80	R	8100	74	R	0	0		0	0		90	6	92	0	1
23	20	15600	41	R	15000	244	R	11100	263	R	6450	77	R	8500	72	R	0	0		0	0		96	6	99	0	1
23	40	15750	40	R	15150	243	R	11300	262	R	6900	75	R	9000	71	R	0	0		0	0		40	6	105	0	1
23	100	15850	40	R	15375	241	R	11300	260	R	7300	74	R	9200	70	R	0	0		0	0		315	15	260	9	1
23	120	21000	50	R	9550	226	R	4850	256	R	14700	76	R	16250	73	R	0	0		0	0		305	10	264	4	1
23	140	23050	52	R	8450	222	R	3325	252	R	0	0		0	0		0	0		0	0		300	10	264	1	1

(continued)

```
            41 OBSERVATIONS              FVSAFR 9/70      RUN 8A
23   520    5350  308 R    4950  183 R    5250 199 R   5200  211 R   4400  214 R      0    0       0    0      60  14  134  0  1
23   540    5900  309 R    4900  184 R    5000 191 R   5000  216 R   4250  217 R      0    0       0    0      94   7  134  0  1
23   600    6200  305 R    5100  184 R    4850 191 R   4950  215 R   4250  218 R      0    0       0    0      96   7  106  0  1
23   620    6600  302 R    5150  185 R    4700 194 R   4800  215 R   4100  219 R      0    0       0    0      85   8  105  0  1
23   640    6900  302 R    5300  185 R    4500 197 R   4500  215 R   4100  223 R      0    0       0    0      90   9  107  0  1
23   700    7250  300 R    5450  184 R    4300 200 R   4450  218 R   3950  224 R      0    0       0    0      90   9  108  0  1
23   720    7400  300 R    5700  185 R    4100 202 R   4400  219 R   3900  225 R      0    0       0    0      94   6  108  0  1
23   740    7800  299 R    6000  186 R    4050 206 R   4400  219 R   4000  226 R      0    0       0    0      85   7  115  0  1
23   800    7850  297 R    6200  188 R    4150 208 R   4300  220 R   4000  230 R      0    0       0    0      94   9  104  0  1
23   820    8300  296 R    6550  190 R    4200 212 R   4350  221 R   4150  228 R      0    0       0    0      85   8  112  0  1
23   840    8650  293 R    6900  190 R    4350 213 R   4500  220 R   4150  228 R      0    0       0    0      85   6  117  0  1
23   900    8700  291 R    7250  190 R    4400 218 R   4400  220 R   4250  231 R      0    0       0    0      94   8  114  0  1
23   920    8900  290 R    7500  191 R    4500 219 R   4500  221 R   4350  233 R      0    0       0    0      94   8  111  0  1
23   940    9200  286 R    8100  192 R    4450 219 R   4400  219 R   4500  229 R      0    0       0    0      85   8  113  0  1

23  1000    9600  285 R    9400  195 R    4900 219 R   4550  219 R   4600  230 R      0    0       0    0      85   8  116  0  1
23  1020   10050  284 R    9850  197 R    5400 227 R   4600  221 R   4700  233 R      0    0       0    0      90   7  111  0  1
23  1040   10450  282 R    9900  197 R    5600 226 R   4700  222 R   4900  235 R      0    0       0    0      85   6  115  0  1
23  1100   10900  281 R    9400  200 R    5800 229 R   4650  224 R   5000  236 R      0    0       0    0      85   8  116  0  1
23  1120   11500  281 R    9550  201 R    6050 232 R   4650  226 R   5250  238 R      0    0       0    0       0   0    0  0  1
23  1140   11950  279 R   10200  202 R    6300 234 R   4600  226 R   5350  239 R      0    0       0    0      85   8  124  0  1
23  1200   12700  279 R   10250  205 R    6500 238 R   4500  230 R   5300  242 R      0    0       0    0      85   8  123  0  1
23  1220   13200  278 R   10500  205 R    6400 238 R   4550  230 R   5350  242 R      0    0       0    0      85   6  122  0  1
23  1240   13750  278 R   10600  207 R    6800 240 R   4500  231 R   5350  244 R      0    0       0    0     100   6  115  0  1
23  1300   14200  278 R   10600  209 R    6900 240 R   4300  230 R   5300  245 R      0    0       0    0     100   3  164  0  1
23  1320   14700  279 R   10500  210 R    6750 243 R   4250  233 R   5350  248 R      0    0       0    0     125   5  119  0  1
23  1340   15100  279 R   10550  213 R    6700 242 R   4050  232 R   5200  250 R      0    0       0    0     105   6  115  0  1
23  1400   15650  280 R   10500  214 R    6650 244 R   4000  233 R   5000  250 R      0    0       0    0     110   8  115  0  1
23  1420   16200  279 R   10550  215 R    6750 243 R   3900  231 R   5000  252 R      0    0       0    0      95   4  131  0  1
23  1440   16700  280 R   10600  218 R    6750 245 R   3750  233 R   4950  253 R      0    0       0    0     120   7  124  0  1
23  1500   17300  280 R   10600  219 R    6750 245 R   3550  233 R   4800  253 R      0    0       0    0      90   5  116  0  1
23  1520   17750  282 R   10550  222 R    6750 246 R   3300  233 R   4650  255 R      0    0       0    0     115   7   93  0  1
23  1540   18275  282 R   10600  222 R    6650 246 R   3075  233 R   4425  254 R      0    0       0    0      90   6  113  0  1
23  1600   18925  283 R   10500  225 R    6550 246 R   2950  233 R   4350  255 R      0    0       0    0     105   6  108  0  1
23  1620   19200  283 R   10250  225 R    6600 246 R   2550  234 R   4200  257 R      0    0       0    0     110   6  105  0  1
23  1640   19350  285 R   10250  225 R    6550 244 R   2400  229 R   4050  252 R      0    0       0    0     100   4  110  0  1
23  1700   19900  283 R   10050  227 R    5450 246 R   2050  225 R   3625  256 R      0    0       0    0     110   6  100  0  1
23  1720   20500  287 R   10050  228 R    6400 245 R   1800  219 R   3450  255 R      0    0       0    0     100   6  104  0  1
23  1740   20750  287 R   10000  229 R    5850 245 R   1500  215 R   3150  257 R      0    0       0    0     100   6  101  0  1
23  1800   21050  290 R    9850  230 R    6300 245 R   1125  209 R   2900  260 R      0    0       0    0      95   7   97  0  1
23  1820   21425  290 R    9700  230 R    5225 247 R    800  198 R   2650  265 R      0    0       0    0     105   6   83  0  1
23  1840   21550  292 R    9775  232 R    6175 246 R    500  182 R   2300  266 R      0    0       0    0      90   7   94  0  1
23  1900   22500  290 R    9500  235 R    6350 250 R      0    0     2350  276 R      0    0       0    0      90   7  103  0  1
23  1920   22650  292 R    9500  223 R    4400 234 R      0    0        0    0        0    0       0    0      90   6  107  0  1
```

(continued)

```
        18 OBSERVATIONS               EVSARR 9/70      RUN 9

23   2245     9000   35 R   4200 206 R   3350 233 R   5250  233 R   5800  215 R      0   0      0   0   340 8 132 0 1
23   2300     9000   33 R   3950 215 R   3300 241 R   5150  238 R   5550  220 R      0   0      0   0   335 6 283 0 1
23   2320     8800   32 R   4200 219 R   3350 240 R   5100  238 R   5700  223 R      0   0      0   0   250 6 283 0 1
23   2340     8500   29 R   4400 216 R   3650 236 R   5000  233 R   5950  220 R      0   0      0   0   285 6 257 0 1
24      0     8350   27 R   4500 218 R   3400 234 R   4800  233 R   5850  220 R      0   0      0   0   285 7 251 0 1
24     20     8100   26 R   4550 216 R   3100 231 R   4700  231 R   6000  220 R      0   0      0   0   280 6 257 0 1
24     40     8000   24 R   4400 216 R   3100 230 R   4400  230 R   5550  220 R      0   0      0   0   285 6 256 0 1
24    100     8100   24 R   4400 216 R   2800 226 R   4250  228 R   5700  222 R      0   0      0   0   290 7 248 0 1
24    120     7850   20 R   4400 213 R   2850 224 R   4350  227 R   5550  220 R      0   0      0   0   295 6 265 0 1
24    140     7850   21 R   4400 210 R   2800 217 R   3850  221 R   5500  219 R      0   0      0   0   275 7 266 0 1
24    200     7550   18 R   4650 209 R   2750 213 R   3700  220 R   5650  218 R      0   0      0   0   275 7 257 0 1
24    220     8000   17 R   4400 206 R   2750 210 R   3250  217 R   5400  220 R      0   0      0   0   275 7 257 0 1
24    240     7900   15 R   4500 205 R   2700 208 R   3250  215 R   5550  219 R      0   0      0   0   270 7 266 0 1
24    300     8000   13 R   4300 205 R   2250 211 R   2900  217 R   5200  222 R      0   0      0   0   270 8 265 0 1
24    320     8100   13 R   4100 204 R   2200 213 R   2650  219 R   4900  226 R      0   0      0   0   285 6 251 0 1
24    340     8000   12 R   3850 204 R   2050 212 R   2350  220 R   4700  228 R      0   0      0   0   265 6 279 0 1
24    400     8400   10 R   4100 202 R   2000 212 R   2450  219 R   4750  231 R      0   0      0   0   295 6 256 0 1
24    420     8600   11 R   3850 200 R   1850 214 R   1850  222 R   4600  235 R      0   0      0   0     0 1 235 0 1

        90 OBSERVATIONS               EVSARR 9/70      RUN 10

24   1420    14600   39 R   5750 213 R   6350 238 R   4750  229 R   4000  198 R      0   0      0   0   310 6 157 0 1
24   1440    14800   39 R   5650 212 R   6450 238 R   4650  233 R   3900  200 R      0   0      1   0   195 3 248 0 1
24   1500    15300   39 R   5250 213 R   6200 240 R   4400  236 R   3400  201 R      0   0      0   0   270 3 217 0 1
24   1520    15500   39 R   4950 210 R   6150 242 R   4100  238 R   3200  200 R      0   0      0   0   240 4 229 0 1
24   1540    15800   39 R   4500 207 R   6100 244 R   3800  241 R   2850  200 R      0   0      0   0   250 4 232 0 1
24   1600    15900   38 R   4050 205 R   5550 246 R   3750  243 R   2700  200 R      0   0      0   0   245 5 234 0 1
```

NOTE1*** THE FIGURES 999 IN THE DROGUE OR DRIFT OBJECT BEARING IS A SPECIAL
CODE USED IN SOME CASES DURING DATA PROCESSING TO INDICATE MISSING DATA.

ABREVIATIONS

NOTE2*** WIND DATA CODE EXPLAINATION**

0= RELATIVE WIND RECORDED IN DEGREES TRUE
1= RELATIVE WIND RECORDED RELATIVE TO SHIP HEAD
2= QUESTIONABLE WIND DATA
3= NO WIND DATA RECORDED
4= WIND RECORDED IN DEGREES TRUE

WDC= WIND DATA CODE
CD1= CURRENT DROGUE 1
CD2= CURRENT DROGUE 2
HOW= HOW BEARINGS WERE OBTAINED
R= RADAR
V= VISUAL
A= ALONGSIDE

		REFERENCE		H O	CD-1		H O	7-MAN RAFT		H O	16FT BOAT		H O	18FT BOAT		H O	30FT BOAT		H O	CD-2		H O	REL. WIND		SHIP		W D
DAY	TIME(Z)	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	DIR	SPD	CRS	SPD	C
24	1620	16150	38	R	3900	197	R	5550	249	R	3250	245	R	2350	199	R	0	0		0	0		245	5	235	0	1
24	1640	16950	41	R	3800	191	R	5550	252	R	3100	246	R	1900	193	R	0	0		0	0		260	7	237	0	1
24	1700	16900	38	R	3750	183	R	5050	252	R	2800	252	R	1600	187	R	0	0		0	0		270	8	228	0	1
24	1720	17150	38	R	3550	174	R	4650	256	R	2450	256	R	1600	181	R	0	0		0	0		275	9	224	0	1
24	1740	18250	38	R	3700	160	R	4350	257	R	2200	260	R	1350	170	R	0	0		0	0		250	5	243	0	1
24	1800	18250	41	R	3900	150	R	3900	261	R	1850	264	R	1100	157	R	0	0		0	0		250	5	244	0	1
24	1820	18300	40	R	4800	142	R	3650	262	R	1800	267	R	1100	147	R	0	0		0	0		300	5	245	0	1
24	1840	19250	41	R	5200	133	R	2900	268	R	1300	274	R	1000	125	R	0	0		0	0		250	5	242	0	1
24	1900	19600	41	R	5400	130	R	2850	268	R	1000	285	R	750	121	R	0	0		0	0		250	5	242	0	1
24	1920	19650	41	R	6100	125	R	2750	271	R	850	305	R	800	119	R	0	0		0	0		230	6	272	0	1
24	1940	19950	42	R	6900	124	R	2200	271	R	800	320	R	900	110	R	0	0		0	0		270	8	230	0	1
24	2000	20050	43	R	7450	121	R	2000	276	R	850	348	R	700	102	R	0	0		0	0		250	7	235	0	1
24	2020	20350	43	R	8750	121	R	1600	281	R	900	360	R	750	104	R	0	0		0	0		270	6	231	0	1
24	2040	20250	45	R	9200	119	R	1350	278	R	950	10	R	730	103	R	0	0		0	0		250	6	234	0	1
24	2100	20700	46	R	9600	118	R	1200	278	R	1100	15	R	650	101	R	0	0		0	0		240	8	236	0	1
24	2120	20650	46	R	10100	117	R	1150	275	R	1300	19	R	700	106	R	0	0		0	0		240	7	237	0	1
24	2140	20700	46	R	10650	117	R	1250	272	R	1400	19	R	700	110	R	0	0		0	0		240	6	243	0	1
24	2200	20700	48	R	11600	116	R	1150	269	R	1450	21	R	700	111	R	0	0		0	0		240	6	243	0	1
24	2220	20800	48	R	12000	115	R	1050	265	R	1600	27	R	850	110	R	0	0		0	0		285	6	250	0	1
24	2240	20700	47	R	12750	113	R	850	261	R	1650	30	R	950	105	R	0	0		0	0		285	6	250	0	1
24	2300	20700	50	R	13400	114	R	650	261	R	1800	35	R	1000	105	R	0	0		0	0		280	6	232	0	1
24	2320	20800	50	R	13950	113	R	500	249	R	2050	37	R	1050	105	R	0	0		0	0		290	4	257	0	1
24	2340	20250	49	R	14550	112	R	650	230	R	2075	36	R	1200	95	R	0	0		0	0		355	9	253	0	1
25	0	19925	49	R	14950	111	R	650	186	R	2125	46	R	1300	93	R	0	0		0	0		300	8	285	0	1
25	20	19700	51	R	15550	113	R	550	149	R	2550	56	R	1625	92	R	0	0		0	0		300	6	250	0	1
25	40	19500	52	R	16050	114	R	760	138	R	2800	57	R	1900	91	R	0	0		0	0		275	2	243	0	1
25	100	19300	51	R	16450	115	R	900	134	R	3050	60	R	2150	93	R	0	0		0	0		270	1	258	0	1
25	120	18950	53	R	16800	114	R	1250	129	R	3475	61	R	2400	96	R	0	0		0	0		270	1	245	0	1
25	140	18700	53	R	17250	112	R	1425	126	R	3950	64	R	2700	89	R	0	0		0	0		300	4	244	0	1
25	200	18650	52	R	17650	114	R	1700	120	R	4300	64	R	3050	87	R	0	0		0	0		300	5	246	0	1
25	220	18375	51	R	18250	113	R	1900	116	R	4500	66	R	3200	83	R	0	0		0	0		290	6	250	0	1
25	240	17800	52	R	18600	115	R	2050	114	R	4950	68	R	3625	84	R	0	0		0	0		300	6	249	0	1
25	300	17400	52	R	18950	114	R	2350	110	R	5175	69	R	3950	85	R	0	0		0	0		300	6	245	0	1
25	320	17075	50	R	19200	113	R	2625	104	R	5550	69	R	4350	83	R	0	0		0	0		300	8	257	0	1
25	340	16850	49	R	19800	111	R	3150	104	R	6200	71	R	5050	82	R	0	0		0	0		295	6	254	0	1
25	400	16600	50	R	20000	111	R	3650	100	R	6600	71	R	5550	83	R	0	0		0	0		300	7	250	0	1
25	420	16550	49	R	20600	112	R	4150	101	R	7300	72	R	6300	84	R	0	0		0	0		300	6	256	0	1
25	440	16700	48	R	21150	109	R	4700	98	R	7850	73	R	6750	83	R	0	0		0	0		300	7	255	0	1
25	500	15850	35	R	18800	110	R	2700	76	R	6500	58	R	5100	64	R	0	0		0	0		30	10	110	0	1
25	520	13950	12	R	13750	118	R	3350	291	R	3950	354	R	3150	336	R	0	0		0	0		0	0	0	0	1
25	540	12400	353	R	10900	134	R	7050	267	R	4750	302	R	5050	283	R	0	0		0	0		280	5	287	0	1
25	600	12450	352	R	11350	135	R	6650	263	R	4250	299	R	4700	278	R	0	0		0	0		295	6	276	0	1
25	620	12700	350	R	11300	134	R	6360	259	R	3800	292	R	4250	276	R	0	0		0	0		310	5	250	0	1
25	640	12800	350	R	11500	134	R	5850	260	R	3550	297	R	4050	277	R	0	0		0	0		320	7	243	0	1
25	700	13400	348	R	11500	132	R	5650	259	R	3500	294	R	3900	273	R	0	0		0	0		320	8	257	0	1
25	720	13800	348	R	11600	129	R	5050	254	R	3400	299	R	3500	280	R	0	0		0	0		315	7	259	0	1
25	740	14300	350	R	11800	127	R	4550	255	R	3200	305	R	3400	282	R	0	0		0	0		320	6	257	0	1

(continued)

```
 25   800   14700  352 R   12250 124 R    4400 254 R   3300  313 R   3300  285 R    0    0         0    0     325  5  245  0  1
 25   820   15150  352 R   12200 120 R    4400 255 R   3200  318 R   3200  289 R    0    0         0    0     315  5  230  0  1
 25   840   15700  348 R   11500 122 R    5050 256 R   3600  310 R   3950  288 R    0    0         0    0     115  4  100  0  1
 25   900   16050  348 R   11600 122 R    5200 256 R   3950  310 R   3750  287 R    0    0         0    0     145  5   64  0  1
 25   920   16150  348 R   11600 123 R    5100 255 R   3150  312 R   4000  285 R    0    0         0    0     120  4   82  0  1
 25   940   16400  347 R   11750 121 R    5250 253 R   3550  310 R   4150  285 R    0    0         0    0     250  5   58  0  1
 25  1000   16400  348 R   11900 121 R    5500 249 R   3200  309 R   4050  283 R    0    0         0    0     120  4   76  0  1
 25  1020   16400  347 R   12000 120 R    5550 248 R   3250  310 R   4050  283 R    0    0         0    0     120  3   77  0  1
 25  1040   16150  346 R   12150 120 R    6250 246 R   3050  308 R   4100  281 R    0    0         0    0     130  4   63  0  1
 25  1100   16500  346 R   12200 120 R    6250 245 R   3350  309 R   4150  279 R    0    0         0    0     110  2   73  0  1
 25  1120   16100  345 R   12100 120 R    6600 243 R   3000  309 R   4100  275 R    0    0         0    0     120  2   60  0  1
 25  1140   15800  344 R   12000 120 R    6950 242 R   3000  309 R   4250  275 R    0    0         0    0     119  2   70  0  1
 25  1200   15700  342 R   12100 120 R    7350 242 R   3000  308 R   4400  274 R    0    0         0    0     180  0   62  0  1
 25  1220   15450  340 R   12050 120 R    7600 240 R   2850  309 R   4450  273 R    0    0         0    0     100  1   60  0  1
 25  1240   15400  340 R   12000 120 R    8000 240 R   3050  306 R   4500  272 R    0    0         0    0     122  2   64  0  1
 25  1300   15250  337 R   11650 120 R    8300 240 R   2900  303 R   4650  270 R    0    0         0    0     180  2   55  0  1
 25  1320   15200  334 R   11350 121 R    8700 239 R   2900  300 R   4650  270 R    0    0         0    0     150  2   53  0  1
 25  1340   15150  332 R   11250 120 R    9000 239 R   2750  299 R   4700  270 R    0    0         0    0       0  0   65  0  1
 25  1400   15300  329 R   11050 120 R    9000 239 R   2750  296 R   4800  270 R    0    0         0    0       0  0   56  0  1
 25  1420   15500  327 R   10900 120 R       0   0     2700  295 R   4900  268 R    0    0         0    0       0  0   54  0  1
 25  1440   15750  325 R   10700 117 R    9550 238 R   2600  290 R   4900  268 R    0    0         0    0       0  0   52  0  1
 25  1500   16000  322 R   10650 116 R    9800 240 R   2500  285 R   4900  264 R    0    0         0    0       0  0   54  0  1
 25  1520   16400  320 R   10650 115 R    9900 240 R   2500  283 R   4900  265 R    0    0         0    0       0  0   50  0  1
 25  1540   16725  319 R   10950 115 R   10175 240 R   2425  282 R   4725  264 R    0    0         0    0       0  0   53  0  1
 25  1600   17400  317 R   10950 115 R   10150 240 R   2475  281 R   4775  264 R    0    0         0    0       0  0   53  0  1
 25  1620   17800  317 R   11050 113 R   10150 240 R   2450  281 R   4700  261 R    0    0         0    0       0  0   45  0  1
 25  1640   18550  315 R   11150 112 R   10150 240 R   2350  278 R   4600  261 R    0    0         0    0       0  0   50  0  1
 25  1700   19000  315 R   11150 112 R   10125 240 R   2375  275 R   4600  259 R    0    0         0    0       0  0   52  0  1
 25  1720   19750  314 R   11225 110 R   10025 240 R   2350  271 R   4550  257 R    0    0         0    0       0  0   64  0  1
 25  1740   20100  313 R   11325 110 R    9950 240 R   2300  269 R   4400  256 R    0    0      2475  185 R    0  0   66  0  1
 25  1800   20650  313 R   11375 110 R   10000 239 R   2450  268 R   4400  254 R    0    0      2450  185 R    0  0   71  0  1
 25  1820   21150  312 R   11600 109 R    9850 239 R   2550  265 R   4250  251 R    0    0      2250  185 R   90  8   75  0  1
 25  1840   21625  311 R   11500 109 R    9900 239 R   3250  266 R   4100  250 R    0    0      2350  185 R   95  7   81  0  1
 25  1900   21900  310 R   11775 109 R   10050 237 R   3400  266 R   4100  250 R    0    0      2300  187 R  110  6   81  0  1
 25  1920   22400  310 R   12000 110 R   10000 237 R   3800  268 R   4150  252 R    0    0      2250  188 R  130  6   88  0  1
 25  1940   23700  310 R   11700 100 R    8950 240 R   4150  290 R   3750  272 R    0    0         0    0      90  4  140  0  1
 25  2000   26700  309 R    9350 100 R   10750 254 R   7250  294 R   5650  282 R    0    0         0    0       0  0    0  0  1

         46 OBSERVATIONS              FVSARR 9/70     RUN 11

 26   300    7000  156 R    2650  32 R    2650 343 R   7000  302 R   4800  312 R    0    0         0    0       0  0    0  0  1
 26   320    6250  156 R    2950  29 R    2850 346 R   7100  305 R   5100  315 R    0    0         0    0     300  5  230  0  1
 26   340    5700  160 R    2800  25 R    2800 346 R      0    0     7300  305 R    0    0         0    0     300  5  230  0  1
 26   400    4950  167 R    2850  13 R    3000 344 R   8300  308 R   5000  315 R    0    0         0    0     300  5  240  0  1
 26   420    4200  173 R    3000   8 R    3400 343 R   8550  310 R   6450  316 R    0    0         0    0     275  6  247  0  1
 26   440    3650  178 R    3100   5 R    3600 345 R   9100  312 R   7000  319 R    0    0         0    0     290  7  243  0  1
 26   500    3100  188 R    3200   2 R    3850 345 R   9600  313 R   7450  320 R    0    0         0    0     300  6  249  0  1
 26   520    2750  199 R    3150 360 R    4000 344 R  10350  313 R   7900  320 R    0    0         0    0     295  5  255  0  1
 26   540    2300  213 R    3300 355 R    4250 342 R  11000  313 R   8300  320 R    0    0         0    0     310  5  253  0  1
 26   600    2300  228 R    3400 355 R    4450 343 R  11600  313 R   8650  319 R    0    0         0    0     300  5  253  0  1
 26   620    2400  241 R    3500 355 R    4500 342 R  11900  315 R   9100  320 R    0    0         0    0     315  4  236  0  1
 26   640    2700  252 R    3550 351 R    4800 340 R  12550  313 R   9500  319 R    0    0         0    0     315  2  252  0  1
 26   700    3150  265 R    3600 350 R    4850 340 R  13100  315 R  10000  320 R    0    0         0    0      35  4  235  0  1
 26   720    3350  272 R    3650 350 R    5000 342 R  13700  315 R  10500  319 R    0    0         0    0     350  4  249  0  1
 26   740    3850  275 R    3800 346 R    5100 329 R  14100  313 R  10900  318 R    0    0         0    0     330  4  258  0  1
 26   800    4150  279 R    3900 345 R    5350 341 R  14700  319 R  11400  318 R    0    0         0    0     315  4  270  0  1
 26   820    4550  281 R    4000 348 R    5400 343 R  15000  314 R  11650  317 R    0    0         0    0     315  3  267  0  1
 26   840    4800  284 R    3975 349 R    5500 343 R  15200  316 R  11750  317 R    0    0         0    0     315  4  260  0  1
```

NOTE1*** THE FIGURES 999 IN THE DROGUE OR DRIFT OBJECT BEARING IS A SPECIAL
CODE USED IN SOME CASES DURING DATA PROCESSING TO INDICATE MISSING DATA.

NOTE2*** WIND DATA CODE EXPLAINATION**
0= RELATIVE WIND RECORDED IN DEGREES TRUE
1= RELATIVE WIND RECORDED RELATIVE TO SHIP HEAD
2= QUESTIONABLE WIND DATA
3= NO WIND DATA RECORDED
4= WIND RECORDED IN DEGREES TRUE

ABREVIATIONS

WDC= WIND DATA CODE
CD1= CURRENT DROGUE 1
CD2= CURRENT DROGUE 2
HOW= HOW BEARINGS WERE OBTAINED
R= RADAR
V= VISUAL
A= ALONGSIDE

		REFERENCE			CD-1			7-MAN RAFT			16FT BOAT			18FT BOAT			30FT BOAT			CD-2			REL. WIND		SHIP		
DAY	TIME(Z)	RANGE	BRG	HOW	RANGE	BRG	HOW	RANGE	BRG	HOW	RANGE	BRG	HOW	RANGE	BRG	HOW	RANGE	BRG	HOW	RANGE	BRG	HOW	DIR	SPD	CRS	SPD	WDC
26	900	5200	284	R	3800	350	R	5450	343	R	15400	315	R	11950	317	R	0	0		0	0		335	4	264	0	1
26	920	5450	284	R	3700	353	R	5250	346	R	15500	315	R	12050	317	R	0	0		0	0		310	2	272	0	1
26	940	5650	283	R	3650	353	R	5300	346	R	15750	315	R	12100	316	R	0	0		0	0		315	2	264	0	1
26	1000	5850	285	R	3450	357	R	5000	347	R	15775	316	R	12100	317	R	0	0		0	0		320	2	258	0	1
26	1020	6100	287	R	3375	1	R	4900	350	R	15725	317	R	12200	318	R	0	0		0	0		280	2	267	0	1
26	1040	6450	285	R	3250	360	R	4700	350	R	15600	316	R	12400	317	R	0	0		0	0		285	2	267	0	1
26	1100	6600	285	R	3250	5	R	4650	351	R	15500	316	R	12500	317	R	0	0		0	0		290	2	256	0	1
26	1120	6800	284	R	3250	9	R	4600	352	R	15525	316	R	12650	317	R	0	0		0	0		260	2	291	0	1
26	1140	7150	281	R	3400	12	R	4550	352	R	15550	316	R	12650	315	R	0	0		0	0		230	2	0	0	1
26	1200	7500	281	R	3300	18	R	4550	354	R	15750	315	R	13050	315	R	0	0		0	0		220	2	313	0	1
26	1220	7800	279	R	3250	24	R	4300	356	R	15650	315	R	12900	314	R	0	0		0	0		0	0	311	0	1
26	1240	8200	276	R	3000	31	R	3900	356	R	15550	314	R	12900	313	R	0	0		0	0		0	0	13	0	1
26	1300	8850	274	R	2800	33	R	3800	353	R	15600	313	R	13200	313	R	0	0		0	0		0	0	15	0	1
26	1320	9650	273	R	2450	36	R	3650	352	R	15900	311	R	13400	312	R	0	0		0	0		0	0	37	0	1
26	1340	10350	272	R	2250	36	R	3650	350	R	16000	311	R	13700	311	R	0	0		0	0		150	1	38	0	1
26	1400	11200	272	R	2150	35	R	3750	346	R	16300	311	R	14000	311	R	0	0		0	0		0	0	39	0	1
26	1420	11800	272	R	2000	36	R	3900	345	R	16500	311	R	14200	311	R	0	0		0	0		0	0	34	0	1
26	1440	12650	272	R	1900	39	R	3900	343	R	16750	310	R	14500	310	R	0	0		0	0		120	1	30	0	1
26	1500	13550	272	R	1500	44	R	3850	339	R	16950	309	R	14800	309	R	0	0		0	0		120	1	32	0	1
26	1520	14350	273	R	1300	50	R	3900	338	R	17100	311	R	15050	310	R	0	0		0	0		120	1	57	0	1
26	1540	14950	272	R	1150	59	R	3650	337	R	17050	311	R	14850	309	R	0	0		0	0		0	0	62	0	1
26	1600	15500	272	R	1100	69	R	3350	332	R	17250	310	R	15000	309	R	0	0		0	0		0	0	0	0	1
26	1620	16550	270	R	800	86	R	3100	328	R	17300	307	R	15200	306	R	0	0		0	0		130	0	29	0	1
26	1640	14250	263	R	4200	110	R	1550	66	R	13650	310	R	11900	307	R	0	0		0	0		345	5	290	0	1
26	1700	14100	264	R	5000	108	R	2400	72	R	13450	312	R	11650	310	R	0	0		0	0		0	0	224	0	1
26	1720	14450	266	R	5100	106	R	2650	72	R	13200	312	R	11550	310	R	0	0		0	0		0	0	247	0	1
26	1740	15100	264	R	5200	105	R	2650	72	R	13050	309	R	11550	308	R	0	0		0	0		0	0	252	0	1
26	1800	15850	264	R	5750	106	R	2850	73	R	13300	308	R	11850	306	R	0	0		0	0		0	0	258	0	1
26	1820	16300	263	R	6200	105	R	3000	72	R	13250	305	R	11900	304	R	0	0		0	0		0	0	251	0	1
26	1840	17100	266	R	6750	106	R	3400	80	R	13650	306	R	12250	306	R	0	0		0	0		0	0	0	0	1

NOTE1*** THE FIGURES 999 IN THE DROGUE OR DRIFT OBJECT BEARING IS A SPECIAL
CODE USED IN SOME CASES DURING DATA PROCESSING TO INDICATE MISSING DATA.

NOTE2*** WIND DATA CODE EXPLAINATION**
0= RELATIVE WIND RECORDED IN DEGREES TRUE
1= RELATIVE WIND RECORDED RELATIVE TO SHIP HEAD
2= QUESTIONABLE WIND DATA
3= NO WIND DATA RECORDED
4= WIND RECORDED IN DEGREES TRUE

ABBREVIATIONS

WDC= WIND DATA CODE
CD1= CURRENT DROGUE 1
CD2= CURRENT DROGUE 2
HOW= HOW BEARINGS WERE OBTAINED
R= RADAR
V= VISUAL
A= ALONGSIDE

58 OBSERVATIONS EVSAR 12/70 RUN 1

		REFERENCE		HOW	CD-1		HOW	7-MAN RAFT		HOW	16FT BOAT		HOW	18FT BOAT		HOW	30FT BOAT		HOW	CD-2		HOW	REL. WIND		SHIP		WDC
DAY	TIME(Z)	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	DIR	SPD	CRS	SPD	C
4	1600	22000	34	R	7350	6	R	0	0		5350	21	R	4750	46	R	0	0		0	0		105	10	75	0	1
4	1625	21300	34	R	7050	357	R	0	0		5200	24	R	4500	49	R	0	0		0	0		104	12	118	0	1
4	1640	19700	44	R	5100	12	R	0	0		4750	79	R	5000	57	R	0	0		0	0		220	15	2	0	1
4	1700	18850	46	R	3250	33	R	0	0		5700	80	R	6150	99	R	3850	149	R	0	0		220	15	2	0	1
4	1720	18350	52	R	3150	42	R	0	0		6400	86	R	6800	102	R	4450	145	R	0	0		280	14	292	0	1
4	1740	18100	53	R	2700	52	R	0	0		7150	92	R	7500	104	R	5000	145	R	0	0		285	13	292	0	1
4	1800	17750	54	R	2300	66	R	0	0		7800	95	R	8000	104	R	5100	142	R	0	0		300	12	302	0	1
4	1820	17350	53	R	2000	85	R	0	0		8650	96	R	8750	104	R	5600	139	R	0	0		280	12	307	0	1
4	1840	17450	52	R	2100	78	R	0	0		9700	88	R	9450	95	R	5350	123	R	0	0		45	23	176	7	1
4	1900	18400	45	R	3300	18	R	0	0		10400	77	R	9600	81	R	4300	99	R	0	0		95	18	118	0	1
4	1920	17950	43	R	3050	1	R	0	0		10650	76	R	9800	81	R	4650	96	R	0	0		90	14	133	0	1
4	1940	17000	41	R	2950	335	R	0	0		10800	78	R	9700	81	R	3900	93	R	0	0		90	13	126	0	1
4	2000	15900	40	R	3100	315	R	0	0		10800	78	R	9650	81	R	3550	91	R	0	0		90	13	127	0	1
4	2020	15100	39	R	3700	330	R	0	0		10900	82	R	9500	84	R	3250	84	R	0	0		90	14	133	0	1
4	2040	14250	34	R	4450	293	R	0	0		10700	80	R	9200	81	R	0	0		0	0		90	14	128	0	1
4	2100	11700	36	R	5450	259	R	0	0		10950	99	R	9250	95	R	3000	128	R	0	0		245	16	358	0	1
4	2120	9250	40	R	7100	230	R	0	0		11750	101	R	9650	105	R	0	0		0	0		85	16	142	0	1
4	2140	8975	23	R	8350	253	R	0	0		9900	94	R	7750	95	R	0	0		0	0		62	26	145	9	1
4	2200	9000	15	R	9175	259	R	0	0		9975	93	R	7450	91	R	300	202	R	0	0		85	20	141	0	1
4	2220	8500	12	R	9900	258	R	0	0		10400	93	R	7600	91	R	400	279	R	0	0		90	19	140	0	1
4	2240	8100	8	R	10600	258	R	0	0		10850	94	R	7700	90	R	500	305	R	0	0		95	21	139	0	1
4	2300	7775	3	R	11400	259	R	0	0		11250	95	R	7850	89	R	700	307	R	0	0		90	19	137	0	1
4	2320	7500	354	R	12175	260	R	0	0		11450	94	R	7950	87	R	0	0		0	0		80	19	139	0	1
4	2340	7350	347	R	12900	260	R	0	0		11750	95	R	7950	89	R	0	0		0	0		85	18	129	0	1
4	2400	7300	338	R	13800	260	R	0	0		11800	96	R	8000	86	R	0	0		0	0		90	18	138	0	1
5	20	7650	330	R	14750	260	R	0	0		11900	96	R	8100	84	R	0	0		0	0		90	18	138	0	1
5	40	7800	323	R	15700	260	R	0	0		12150	96	R	8000	84	R	0	0		0	0		90	16	134	0	1
5	100	8350	317	R	16450	260	R	0	0		12400	95	R	7900	82	R	0	0		0	0		90	18	137	0	1
5	120	7650	318	R	16800	265	R	0	0		12550	103	R	8600	93	R	0	0		0	0		300	30	314	0	1
5	140	4200	297	R	15800	250	R	0	0		15450	110	R	12000	106	R	0	0		0	0		270	26	328	0	1
5	200	4200	287	R	16150	248	R	0	0		15300	109	R	13100	106	R	0	0		0	0		270	20	333	0	1
5	220	4450	273	R	16450	246	R	0	0		15100	105	R	13850	109	R	0	0		0	0		270	28	317	0	1
5	240	4900	259	R	17200	242	R	0	0		15100	105	R	14800	110	R	0	0		0	0		250	26	321	0	1
5	300	5550	249	R	17400	240	R	0	0		15550	106	R	15100	111	R	0	0		0	0		240	26	322	0	1
5	320	6000	243	R	17600	238	R	0	0		15400	106	R	15800	110	R	0	0		0	0		240	30	337	0	1
5	340	7000	240	R	18600	235	R	0	0		15500	102	R	16500	112	R	0	0		0	0		250	24	332	0	1
5	400	7950	239	R	18950	233	R	0	0		15700	101	R	16600	107	R	0	0		0	0		270	25	310	0	1
5	420	8550	238	R	19400	235	R	0	0		15550	99	R	16600	106	R	0	0		0	0		250	25	320	0	1
5	440	9100	240	R	19950	233	R	0	0		15650	98	R	16650	104	R	0	0		0	0		240	25	338	0	1
5	500	10100	241	R	20450	232	R	0	0		14200	98	R	15250	94	R	0	0		0	0		140	25	75	0	1
5	520	0	0		0	0		0	0		0	0		0	0		0	0		0	0		0	0	0	0	2
5	540	15150	267	R	23250	246	R	0	0		11450	67	R	11700	73	R	0	0		0	0		95	20	134	0	1
5	600	16350	267	R	24200	248	R	0	0		11850	67	R	11850	67	R	0	0		0	0		95	23	140	0	1
5	620	17500	268	R	24900	248	R	0	0		11850	70	R	12250	69	R	0	0		0	0		90	20	150	0	1
5	640	18950	269	R	26050	250	R	0	0		11650	66	R	12200	66	R	0	0		0	0		90	23	135	0	1

(continued)

```
  5    700   20500  269 R   27000  252 R    0   0    11600   63 R  11250   61 R      0    0      0   0    90 19  135  0  1
  5    720   22100  271 R   29050  253 R    0   0    11500   63 R  12300   60 R      0    0      0   0    80 24  128  0  1
  5    740   23650  271 R   28050  253 R    0   0        0    0    11900   57 R      0    0      0   0    80 26  153  0  1
  5    820   25950  271 R       0    0      0   0        0    0    12675   47 R   5550  354 R   0   0    84 24  142  0  1
  5    840   29800  270 R       0    0      0   0     9600   48 R      0    0       0    0      0   0    97 28  110 10  1

        F4 OBSERVATIONS           FVSAR 12/70        RUN 2

  9   1420   13500  267 R    6750  169 R    0   0        0    0     5850  341 R   6750  333 R   0   0   310  7   42  0  1
  9   1440   13950  267 R    6600  170 R    0   0        0    0     6000  341 R   7050  332 R   0   0   250  9  107  0  1
  9   1500   14400  268 R    6400  173 R    0   0        0    0     5400  335 R   7450  329 R   0   0   260  7  100  0  1
  9   1520   14800  269 R    6300  177 R    0   0        0    0     6500  330 R   8000  327 R   0   0   300  8   77  0  1
  9   1540   15300  270 R    5950  179 R    0   0        0    0     6950  329 R   8350  324 R   0   0   270 10  120  0  1
  9   1600   15700  271 R    5800  182 R    0   0        0    0     7200  325 R   8700  324 R   0   0   250  5   98  0  1
  9   1620   16150  271 R    5600  185 R    0   0        0    0     7700  323 R   9150  321 R   0   0   275  5  127  0  1
  9   1640   16750  273 R    5400  189 R    0   0        0    0     8250  324 R   9700  321 R   0   0   270  4  115  0  1
  9   1700   17050  273 R    5250  193 R    0   0        0    0     8850  323 R  10250  321 R   0   0   210  5   98  0  1
  9   1740   18200  277 R    5500  207 R    0   0        0    0    10000  322 R  11300  320 R   0   0   245  5   79  0  1
  9   1720   17550  275 R    5300  199 R    0   0        0    0     9350  323 R  10750  321 R   0   0   255  5   90  0  1
  9   1800   18600  277 R    5450  210 R    0   0        0    0    10250  322 R  11450  321 R   0   0   270  3   91  0  1
  9   1820   18950  278 R    5450  212 R    0   0        0    0    10750  322 R  11750  320 R   0   0   360  0   61  0  1
  9   1840   19000  280 R    5300  210 R    0   0        0    0    10950  325 R  11850  322 R   0   0   280  2   92  0  1
  9   1900   19200  280 R    5400  212 R    0   0        0    0    10950  325 R  12200  323 R   0   0   275  4   84  0  1
  9   1920   19500  281 R    5450  213 R    0   0        0    0    11200  327 R  12300  324 R   0   0   310  2   91  0  1
  9   1940   19850  281 R    5650  215 R    0   0        0    0    11550  326 R  12400  323 R   0   0   290  2  103  0  1
  9   2000   20100  282 R    5850  218 R    0   0        0    0    11850  327 R  12350  326 R   0   0   342  3   92  0  1
  9   2020   20500  282 R    6050  221 R    0   0        0    0    12000  328 R  12550  324 R   0   0   330  6   90  0  1
  9   2040   20800  282 R    5600  221 R    0   0        0    0    12050  329 R  12300  324 R   0   0   300  2   96  0  1
  9   2100   21000  282 R    6300  222 R    0   0        0    0    12100  329 R  12450  325 R   0   0   290  3  110  0  1
  9   2120   21700  282 R    6600  224 R    0   0        0    0    12600  329 R  12500  324 R   0   0   285  2  104  0  1
  9   2140   22400  284 R    6450  229 R    0   0        0    0    12650  330 R  12500  327 R   0   0   250  4   85  0  1
  9   2200   22450  285 R    6700  232 R    0   0        0    0    12800  329 R  12650  326 R   0   0   200  4   95  0  1
  9   2220   23050  286 R    5700  229 R    0   0        0    0    13100  330 R  12600  326 R   0   0   200  1   74  0  1
  9   2240   23200  286 R    6750  229 R    0   0        0    0    13150  330 R  12775  326 R   0   0   240  4   39  0  1
  9   2300   23400  286 R    7200  231 R    0   0        0    0    13350  330 R  12825  326 R   0   0   135  7  114  0  1
  9   2320   23850  285 R    7200  231 R    0   0        0    0    14000  329 R  13200  325 R   0   0   360  6  153  0  1
  9   2340   24200  284 R    7100  231 R    0   0        0    0    14150  331 R  14000  327 R   0   0   360  0  196  0  1
  9   2400   24100  285 R    6250  231 R    0   0        0    0    15000  330 R  13950  328 R   0   0   360  0  203  0  1
 10     20   24200  285 R    6200  231 R    0   0        0    0    15200  334 R  14800  329 R   0   0   300  3  203  0  1
 10     40   24500  287 R    5850  240 R    0   0        0    0    16150  343 R  15150  339 R   0   0   270  2  250  0  1
 10    100   24600  288 R    5900  242 R    0   0        0    0    16150  343 R  15700  340 R   0   0   330  5  268  0  1
 10    120   24950  289 R    6000  243 R    0   0        0    0    16800  338 R  16000  337 R   0   0   210  4   15  0  1
 10    140   25300  290 R    6100  242 R    0   0        0    0    17400  341 R  16400  338 R   0   0   360  0   47  0  1
 10    200   25650  291 R    6050  242 R    0   0        0    0    17600  341 R  17000  338 R   0   0    90  4   86  0  1
 10    220   25650  292 R    6500  245 R    0   0        0    0    18210  341 R  17250  337 R   0   0    90  1  117  0  1
 10    240   26100  293 R    6500  245 R    0   0        0    0    18850  339 R  17900  335 R   0   0     0  4  155  0  1
 10    300   26500  294 R    6550  242 R    0   0        0    0    19500  340 R  18750  337 R   0   0     0  4  197  0  1
 10    320   26450  295 R    6450  244 R    0   0        0    0    20400  340 R  19600  337 R   0   0     0  3  194  0  1
 10    340   26750  295 R    6450  251 R    0   0        0    0    21050  338 R  20250  335 R   0   0   320  3  200  0  1
 10    400   27150  297 R    6500  254 R    0   0        0    0    21050  338 R  21900  340 R   0   0    60  3  133  0  1
 10    420   27350  298 R    6350  257 R    0   0        0    0    21800  338 R  22600  340 R   0   0     0  4  185  0  1
 10    440   27500  299 R    6300  259 R    0   0        0    0    22350  339 R  23450  343 R   0   0     0  4  186  0  1
 10    500   28150  299 R    5450  262 R    0   0        0    0    24150  343 R  23300  346 R   0   0    85  4  121  0  1
 10    520       0    0         0    0      0   0        0    0        0    0         0    0      0   0     0  0    0  0  1
 10    540       0    0         0    0      0   0        0    0        0    0         0    0      0   0     0  0    0  0  1
 10    600   18200  282 R   12650  184 R    0   0        0    0    13200    5 R  12400  355 R   0   0   300  7  283  0  1
 10    620   17650  281 R   12950  183 R    0   0        0    0    13400    9 R  12250  358 R   0   0   280  8  300  0  1
```

NOTE1*** THE FIGURES 999 IN THE DROGUE OR DRIFT OBJECT BEARING IS A SPECIAL
CODE USED IN SOME CASES DURING DATA PROCESSING TO INDICATE MISSING DATA.

ABREVIATIONS
WDC= WIND DATA CODE
CD1= CURRENT DROGUE 1
CD2= CURRENT DROGUE 2
HOW= HOW BEARINGS WERE OBTAINED
R= RADAR
V= VISUAL
A= ALONGSIDE

NOTE2*** WIND DATA CODE EXPLAINATION**
0= RELATIVE WIND RECORDED IN DEGREES TRUE
1= RELATIVE WIND RECORDED RELATIVE TO SHIP HEAD
2= QUESTIONABLE WIND DATA
3= NO WIND DATA RECORDED
4= WIND RECORDED IN DEGREES TRUE

		REFERENCE		HOW	CD-1		HOW	7-MAN RAFT		HOW	16FT BOAT		HOW	18FT BOAT		HOW	30FT BOAT		HOW	CD-2		HOW	REL. WIND		SHIP		WDC
DAY	TIME(Z)	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	DIR	SPD	CRS	SPD	C
10	640	17900	280	R	13450	183	R	0	0		0	0		13400	1	R	12600	357	R	0	0		240	8	323	0	1
10	700	17950	279	R	13750	183	R	0	0		0	0		13550	8	R	12700	356	R	0	0		240	8	318	0	1
10	720	18000	279	R	14150	183	R	0	0		0	0		13800	9	R	13050	355	R	0	0		245	9	344	0	1
10	740	18300	278	R	14400	185	R	0	0		0	0		13900	10	R	13200	355	R	0	0		250	12	319	0	1
10	800	18700	276	R	14650	187	R	0	0		0	0		14400	9	R	13375	355	R	0	0		240	7	336	0	1
10	820	18925	276	R	15325	187	R	0	0		0	0		14410	11	R	13775	353	R	0	0		240	11	331	0	1
10	840	19250	276	R	15525	188	R	0	0		0	0		14500	12	R	13775	359	R	0	0		240	13	320	0	1
10	900	19600	273	R	16275	190	R	0	0		0	0		14375	12	R	13975	353	R	0	0		270	13	329	0	1
10	920	19900	272	R	16600	190	R	0	0		0	0		14375	14	R	13925	353	R	0	0		270	10	333	0	1
10	940	20325	271	R	16900	192	R	0	0		0	0		14525	14	R	14250	353	R	0	0		245	14	340	0	1
10	1000	20600	271	R	17200	192	R	0	0		0	0		14575	14	R	14400	353	R	0	0		245	13	336	0	1
10	1020	21350	269	R	17650	193	R	0	0		0	0		14650	14	R	14550	354	R	0	0		245	10	327	0	1
10	1040	21625	269	R	18200	195	R	0	0		0	0		14525	15	R	14500	355	R	0	0		330	8	324	0	1
10	1100	21800	268	R	18750	195	R	0	0		0	0		14800	15	R	14100	353	R	0	0		250	12	333	0	1
10	1120	23600	259	R	22375	197	R	0	0		0	0		13775	17	R	10800	345	R	0	0		240	6	16	10	1

55 OBSERVATIONS FVSAR 12/70 RUN 3

10	1640	19700	10	R	23150	82	R	0	0		0	0		4100	210	R	4250	261	R	0	0		270	16	335	0	1
10	1700	18900	10	R	22950	84	R	0	0		0	0		4350	211	R	4050	257	R	0	0		235	16	360	0	1
10	1720	18650	7	R	22450	86	R	0	0		0	0		4400	214	R	4100	255	R	0	0		235	16	360	0	1
10	1740	18250	6	R	22000	86	R	0	0		0	0		4200	213	R	4100	254	R	0	0		240	17	350	0	1
10	1800	17950	3	R	21450	86	R	0	0		0	0		4200	215	R	4150	254	R	0	0		240	18	352	0	1
10	1820	17700	2	R	20850	87	R	0	0		0	0		3900	216	R	4150	252	R	0	0		250	18	342	0	1
10	1840	17350	359	R	20350	89	R	0	0		0	0		3650	218	R	4150	255	R	0	0		250	16	340	0	1
10	1900	17150	356	R	19700	89	R	0	0		0	0		3650	218	R	4400	252	R	0	0		250	16	354	0	1
10	1920	16750	355	R	19025	90	R	0	0		0	0		0	0		4350	251	R	0	0		250	20	348	0	1
10	1940	17025	347	R	17325	83	R	0	0		0	0		0	0		4750	267	R	0	0		85	14	235	12	2
10	2000	24200	338	R	14300	61	R	0	0		0	0		8475	298	R	10900	298	R	0	0		90	14	138	12	1
10	2020	25350	341	R	13950	62	R	0	0		0	0		9000	311	R	11375	307	R	0	0		245	20	349	0	1
10	2040	25500	340	R	13250	62	R	0	0		0	0		9200	310	R	11400	305	R	0	0		270	22	343	0	1
10	2100	25500	339	R	12650	63	R	0	0		0	0		9275	310	R	11350	304	R	0	0		270	20	347	0	1
10	2120	25650	337	R	11925	67	R	0	0		0	0		9125	310	R	11300	303	R	0	0		290	20	347	0	1
10	2140	25925	336	R	11625	62	R	0	0		0	0		9075	311	R	11250	302	R	0	0		270	21	349	0	1
10	2200	26050	335	R	11000	62	R	0	0		0	0		8825	312	R	11200	301	R	0	0		270	21	355	0	1
10	2220	26200	333	R	10475	63	R	0	0		0	0		8475	315	R	10800	301	R	0	0		270	20	350	0	1
10	2240	26450	333	R	10000	62	R	0	0		0	0		8450	316	R	10550	301	R	0	0		285	24	354	0	1
10	2300	26700	330	R	9575	59	R	0	0		0	0		8150	317	R	10475	300	R	0	0		250	20	4	0	1
10	2320	27000	331	R	9050	60	R	0	0		0	0		8275	319	R	10375	299	R	0	0		250	20	357	0	1
10	2340	27200	329	R	8300	63	R	0	0		0	0		8200	316	R	10400	295	R	0	0		240	17	359	0	1
10	2400	27300	326	R	7700	61	R	0	0		0	0		8350	317	R	10350	295	R	0	0		250	18	2	0	1
11	20	27700	326	R	7150	63	R	0	0		0	0		8150	320	R	10450	295	R	0	0		260	20	343	0	1
11	40	28100	324	R	6350	62	R	0	0		0	0		8100	322	R	10200	294	R	0	0		270	18	356	0	1
11	100	28450	323	R	5650	58	R	0	0		0	0		7950	321	R	10250	291	R	0	0		270	17	3	0	1
11	120	28800	321	R	5300	58	R	0	0		0	0		8000	322	R	10000	294		0	0		270	22	356	0	1
11	140	29300	321	R	4900	56	R	0	0		0	0		8100	324	R	10200	293	R	0	0		270	20	358	0	1

(continued)

```
11   200   29700 320 R    3950  52 R     0  0     0  0    8130 323 R   10200 291 R        0  0     270 20  359  0  1
11   220   30900 319 R    3300  44 R     0  0     0  0    7900 324 R   10350 291 R        0  0     260 19  359  0  1
11   245   31350 318 R    3300  31 R     0  0     0  0    8150 325 R   10250 292 R        0  0     260 18    4  0  1
11   300   31450 316 R    2850  18 R     0  0     0  0    7900 325 R   10400 292 R        0  0     260 14    5  0  1
11   320   29400 319 R    1650 113 R     0  0     0  0    7850 321 R    8400 275 R        0  0     360 22  340  8  1
11   340   25400 306 R    6750 158 R     0  0     0  0    8050 235 R       0   0         0  0     330 22  301  6  1
11   400   23200 302 R    9850 161 R     0  0     0  0    4550 179 R    9350 214 R        0  0     330 22  301  6  1
11   420   22950 301 R   10350 159 R     0  0     0  0    4850 170 R    9200 209 R        0  0     145 30  159  0  1
11   440   23500 303 R   10350 154 R     0  0     0  0    5200 166 R    9500 210 R        0  0     330 22  301  6  1
11   500   23850 296 R   10450 157 R     0  0     0  0       0   0      9950 201 R        0  0     130 20  125  0  1
11   520   24050 301 R   10600 166 R     0  0     0  0    6400 166 R       0   0         0  0     130 20  125  0  1
11   540   23500 302 R   11200 168 R     0  0     0  0    7400 160 R   10750 230 R        0  0     330 15  301  0  1
11   600   22850 301 R   11900 167 R     0  0     0  0    8250 158 R   11300 196 R        0  0     335 16  237  2  1
11   620   22250 301 R   12900 166 R     0  0     0  0    9450 150 R   11950 190 R        0  0     340 14  290  2  1
11   700   20950 300 R   13650 164 R     0  0     0  0   10850 147 R   12650 186 R        0  0       0 18  235  2  1
11   720   20350 301 R   14500 163 R     0  0     0  0   12230 144 R   13550 179 R        0  0       0 18  295  2  1
11   740   19500 300 R   15000 160 R     0  0     0  0   13200 141 R   14100 174 R        0  0       0 18  296  2  1
11   800   19300 302 R   15775 159 R     0  0     0  0   13850 140 R   14750 172 R        0  0     355 22  295  2  1
11   820   18325 302 R   16000 159 R     0  0     0  0   15300 141 R   15900 170 R        0  0       5 20  293  2  1
11   840   17950 302 R   16600 157 R     0  0     0  0   16100 139 R   16150 167 R        0  0      15 20  295  2  1
11   900   17225 301 R   17100 156 R     0  0     0  0   17525 137 R   17000 164 R        0  0      10 18  300  2  1
11   920   18850 299 R   16000 156 R     0  0     0  0   16625 134 R   16100 163 R        0  0     210 14  103  2  1
11   940   20200 295 R   15400 156 R     0  0     0  0   15825 132 R   15550 163 R        0  0     270 10   55  0  1
11  1000   21050 292 R   15200 155 R     0  0     0  0   15600 129 R   15750 161 R        0  0     180 14  117  0  1
11  1020   21700 290 R   14500 155 R     0  0     0  0   15400 128 R   15250 159 R        0  0     105 15  218  0  1
11  1040   22400 293 R   14000 157 R     0  0     0  0   15300 128 R   15200 159 R        0  0      90  8  208  0  1
11  1100   23000 299 R   13875 167 R     0  0     0  0   15400 135 R   15200 168 R        0  0     120  9  230  0  1
11  1120   23750 302 R   13450 169 R     0  0     0  0   15550 138 R   14900 169 R        0  0     110 11  229  0  1

      55 OBSERVATIONS             EVSAR 12/70        RUN 4

11  1840   24650 292 R   15400 174 R     0  0     0  0   14450 287 R       0   0         0  0     280 10   58  0  1
11  1900   18650 295 R   20300 165 R     0  0     0  0       0   0         0   0         0  0      10 20  296 11  1
11  1920   15300 290 R   23900 153 R     0  0     0  0       0   0         0   0         0  0       0  0    0  0  2
11  2000   14000 288 R   23600 147 R     0  0     0  0       0   0         0   0         0  0     300 16   65 10  1
11  2020   15150 289 R   23950 161 R     0  0     0  0    5300 222 R       0   0         0  0     330 18    0 10  1
11  2040   18050 278 R   26200 169 R     0  0     0  0    9200 226 R       0   0         0  0     330 18   55 10  1
11  2100   19550 281 R   21550 162 R     0  0     0  0    7600 220 R       0   0         0  0       0  2  150 10  1
11  2120   20100 294 R   20100 171 R     0  0     0  0    6630 262 R       0   0         0  0      80  4  310  4  1
11  2140   20250 294 R   20250 168 R     0  0     0  0    6625 256 R       0   0         0  0      55  4  310  0  1
11  2200   20200 298 R   20750 172 R     0  0     0  0    6650 256 R       0   0         0  0      60  6  270  4  1
11  2220   20900 302 R   18800 171 R     0  0     0  0    6350 268 R       0   0         0  0       0  6  150 10  1
11  2240   23275 314 R   13700 162 R     0  0     0  0    7130 314 R       0   0      6450 13 R    50  6  300 10  1
11  2300   23550 307 R   13550 155 R     0  0     0  0    7050 309 R       0   0      6800  9 R   165  4  217  0  1
11  2320   23750 306 R   13250 151 R     0  0     0  0    7050 307 R       0   0      6850  9 R   150  4  216  0  1
11  2340   24200 306 R   13150 152 R     0  0     0  0    7100 308 R       0   0      7100 10 R   210  6  211  0  1
11  2400   24550 307 R   12300 149 R     0  0     0  0    7200 311 R       0   0      7250 14 R   240  4  154  0  1
12    20   25400 307 R   12100 150 R     0  0     0  0    7700 312 R       0   0      7400 13 R   240  4  140  0  1
12    40   26050 307 R   11400 150 R     0  0     0  0    8400 312 R       0   0      7700  7 R   180  2  184  0  1
12   100   26550 310 R   11000 148 R     0  0     0  0    8400 312 R       0   0      8430  9 R   210  3  182  0  1
12   120   27150 309 R   10700 147 R     0  0     0  0    8900 311 R       0   0      8350  7 R   200  3  175  0  1
12   140   28150 311 R    9900 149 R     0  0     0  0    9250 313 R       0   0      8850  5 R   240  2  168  0  1
12   200   28650 311 R    9400 147 R     0  0     0  0    9900 314 R       0   0      9100  5 R   200  1  178  0  1
12   220   29000 310 R    9050 145 R     0  0     0  0   10300 313 R       0   0      9025  6 R   270  3  171  0  1
12   240   29750 312 R    8600 143 R     0  0     0  0   10600 315 R       0   0      9950  5 R   255  2  196  0  1
12   300   30300 312 R    9400 135 R     0  0     0  0   10900 316 R       0   0     10350  5 R   360  0  190  0  1
12   320   30600 313 R    8150 138 R     0  0     0  0 [illegible] 317 R     0   0     10300  3 R   360  0  155  0  1
12   340   29950 314 R   10000 147 R     0  0     0  0 [illegible] 311 R     0   0      8250 10 R   360  0   25  0  1
12   400   29900 310 R   10300 150 R     0  0     0  0 [illegible] 305 R     0   0      7650  7 R   360  0    5  0  1
```

```
NOTE1***  THE FIGURES 999 IN THE DROGUE OR DRIFT OBJECT BEARING IS A SPECIAL
          CODE USED IN SOME CASES DURING DATA PROCESSING TO INDICATE MISSING DATA.                  **ABBREVIATIONS**

NOTE2***  WIND DATA CODE EXPLAINATION**                                                             WDC= WIND DATA CODE
      0= RELATIVE WIND RECORDED IN DEGREES TRUE                                                     CD1= CURRENT DROGUE 1
      1= RELATIVE WIND RECORDED RELATIVE TO SHIP HEAD                                               CD2= CURRENT DROGUE 2
      2= QUESTIONABLE WIND DATA                                                                     HOW= HOW BEARINGS WERE OBTAINED
      3= NO WIND DATA RECORDED                                                                        R= RADAR
      4= WIND RECORDED IN DEGREES TRUE                                                                V= VISUAL
                                                                                                      A= ALONGSIDE

                                H                   H      7-MAN    H                  H                  H                  H                  H       REL.            W
                  REFERENCE     O        CD-1       O      RAFT     O   15FT  BOAT     O   18FT  BOAT     O   30FT  BOAT     O     CD-2         O       WIND    SHIP    D
DAY  TIME(Z)     RANGE    BRG   W     RANGE  BRG    W   RANGE  BRG  W  RANGE   BRG     W  RANGE   BRG     W  RANGE   BRG     W   RANGE  BRG    W   DIR SPD  CRS SPD  C

12     420       32050    311   R     10350  149    R       0    0         0     0       10550   305    R      0      0        7550    5    R   310  1    66  0   1
12     440       30850    311   R     10350  149    R       0    0         0     0       10900   303    R      0      0        7250  360    R   330  2   121  0   1
12     500       31300    310   R      9650  145    R       0    0         0     0       11500   301    R      0      0        7600  358    R   360  0   157  0   1
12     520       31900    310   R      9100  148    R       0    0         0     0       11750   303    R      0      0        8300  358    R   360  0   190  0   1
12     540       32250    308   R      9000  143    R       0    0         0     0       12200   301    R      0      0        8200  356    R   360  0   220  0   1
12     600       32250    315   R      8900  149    R       0    0         0     0       12650   309    R      0      0        8500    3    R   360  0   240  0   1
12     620       32750    318   R      8900  155    R       0    0         0     0       12950   311    R      0      0        8550    5    R   270  2   294  0   1
12     640       33150    314   R      8650  150    R       0    0         0     0       13200   306    R      0      0        8850  357    R   180  3    13  0   1
12     700       33150    312   R      8600  149    R       0    0         0     0       13500   307    R      0      0        8800  358    R   360  0    33  0   1
12     720       33450    312   R      8700  148    R       0    0         0     0       13700   305    R      0      0        8850  356    R   360  0    32  0   1
12     740       33725    312   R      8475  147    R       0    0         0     0       13650   305    R      0      0        8850  355    R   360  0    35  0   1
12     800       34025    311   R      8650  147    R       0    0         0     0       14025   307    R      0      0        8950  355    R   270  4    44  0   1
12     820       34025    312   R      8550  151    R       0    0         0     0       14125   307    R      0      0        9025  359    R   215  4    16  0   1
12     840       34425    311   R      8275  149    R       0    0         0     0       14050   308    R      0      0        9250  355    R   235  3    30  0   1
12     900       34925    313   R      8100  149    R       0    0         0     0       14500   310    R      0      0        9650  359    R   240  4    34  0   1
12     920       34900    313   R      8000  151    R       0    0         0     0       14600   310    R      0      0        9725  356    R   240  6    23  0   1
12     940       35250    314   R      7850  154    R       0    0         0     0       14450   312    R      0      0        9775  356    R   250  6     9  0   1
12    1000       35450    314   R      8000  154    R       0    0         0     0       14100   311    R      0      0        9750  357    R   210  4    31  0   1
12    1020       35750    314   R      8350  156    R       0    0         0     0       14000   314    R      0      0       10100  358    R   235  6    14  0   1
12    1040       35725    314   R      7850  159    R       0    0         0     0       14150   314    R      0      0        9800  358    R   245  8     2  0   1
12    1100       36100    313   R      8300  160    R       0    0         0     0       14150   312    R      0      0       10050  355    R   270  9    70  0   1
12    1120       37150    312   R      4825  158    R       0    0         0     0       16850   311    R      0      0       13950  346    R    15  5   159 10   1
12    1340       27500    305   R      4900  312    R       0    0         0     0        5150   259    R      0      0        5300   84    R   350  2   196  0   1
12    1400       27850    310   R      4600  322    R       0    0         0     0        5400   268    R      0      0        5400   89    R   180  1   236  0   1
12    1420       28100    305   R      4800  320    R       0    0         0     0        5400   267    R      0      0        5500   86    R   360  0   217  0   1
12    1440       28300    305   R      5200  320    R       0    0         0     0        5550   265    R      0      0        5600   83    R   280  5   217  0   1
12    1500       28600    309   R      5100  324    R       0    0         0     0        5550   273    R      0      0        5500   89    R     0  4   192  0   1
```

```
NOTE1***  THE FIGURES 999 IN THE DROGUE OR DRIFT OBJECT BEARING IS A SPECIAL
          CODE USED IN SOME CASES DURING DATA PROCESSING TO INDICATE MISSING DATA.          **ABREVIATIONS**

NOTE2***  WIND DATA CODE EXPLAINATION**                                                     WDC= WIND DATA CODE
     0= RELATIVE WIND RECORDED IN DEGREES TRUE                                              CD1= CURRENT DROGUE 1
     1= RELATIVE WIND RECORDED RELATIVE TO SHIP HEAD                                        CD2= CURRENT DROGUE 2
     2= QUESTIONABLE WIND DATA                                                              HOW= HOW BEARINGS WERE OBTAINED
     3= NO WIND DATA RECORDED                                                                 R= RADAR
     4= WIND RECORDED IN DEGREES TRUE                                                         V= VISUAL
                                                                                              A= ALONGSIDE

                          H              H    7-MAN   H             H              H              H              H    REL.          W
              REFERENCE   O      CD-1    O    RAFT    O  16FT BOAT  O  18FT BOAT   O  30FT BOAT   O     CD-2     O    WIND   SHIP   D
DAY  TIME(Z)  RANGE  BRG  W  RANGE  BRG  W  RANGE BRG W  RANGE  BRG W  RANGE  BRG  W  RANGE  BRG  W  RANGE  BRG  W  DIR SPD CRS SPD C

        66 OBSERVATIONS           FVSAR 2/71         RUN 1

25   1510     7400  176  R   2700  181  R      0   0        0    0     2600  195  R      0    0        0    0     360 12  317  1  1
25   1550     9150  176  R   4650  179  R      0   0        0    0     4900  179  R      0    0        0    0     175 12  122  2  1
25   1610     8100  191  R   4100  215  R      0   0        0    0     4500  209  R      0    0        0    0     165  8  119  1  1
25   1630     7750  199  R   4500  229  R      0   0        0    0     4500  219  R      0    0        0    0     180  8  111 11  1
25   1650     7500  208  R   4850  242  R      0   0        0    0     4750  229  R      0    0        0    0     180 10  119  1  1
25   1710     7650  215  R   5500  254  R      0   0        0    0     5050  237  R      0    0        0    0     180 10  121  1  1
25   1730     7450  211  R   4950  246  R      0   0        0    0     4650  225  R      0    0        0    0     355 20  338 10  1
25   1750     8450  187  R   4450  209  R      0   0        0    0     5650  183  R      0    0        0    0     330 16  335  1  1
25   1810     7000  191  R   4000  233  R      0   0     2450  320 R   4300  194  R      0    0        0    0     120  9  151  1  1
25   1830     5500  213  R   5400  270  R      0   0     5150  319 R   3550  234  R      0    0        0    0     130  9  152  1  1
25   1850     5400  244  R   7350  295  R      0   0     7600  327 R   4700  273  R      0    0        0    0     135 10  151  1  1
25   1910     4500  245  R   6700  302  R      0   0     6850  340 R   3700  275  R      0    0        0    0     330 14  300  1  1
25   1930     3700  192  R   2200  307  R      0   0     4750   22 R   2400  161  R      0    0        0    0     335 16  310 11  1
25   1950     5550  163  R      0    0  V      0   0     5700   60 R   4150  148  R      0    0        0    0     240  6   90 11  1
25   2010     6150  209  R   5100  276  R      0   0     2900  349 R   4500  218  R      0    0        0    0      90  6  209  1  1
25   2050     5650  197  R   5100  268  R      0   0     3700  341 R   4250  210  R      0    0        0    0      90  6  206  0  1
25   2130     5250  209  R   5550  292  R      0   0     3900    2 R   3900  224  R      0    0        0    0      90  6  205  0  1
25   2150     5250  209  R   5750  297  R      0   0     4150    9 R   3700  224  R      0    0        0    0     100 12  192  0  1
25   2210     5100  210  R   5950  301  R      0   0     4500   13 R   3600  227  R      0    0        0    0      90  6  198  0  1
25   2230     4900  206  R   6350  300  R      0   0     4650   12 R   3350  225  R      0    0        0    0     110  4  204  0  1
25   2250     4650  209  R   6550  307  R      0   0     5000   18 R   3050  232  R      0    0     5650  301  R   85  8  208  0  1
25   2310     4600  208  R   6800  309  R      0   0     5200   19 R   2750  234  R      0    0     5950  303  R   70  6  210  0  1
25   2330     4400  209  R   7150  312  R      0   0     5800   22 R   2500  239  R      0    0     6200  307  R   30  8  203  0  1
25   2350     4250  210  R   7500  315  R      0   0     6000   23 R   2350  245  R      0    0     6550  311  R   70  4  195  0  1
26     10     4250  211  R   7800  316  R      0   0     6200   24 R   2250  252  R      0    0     6950  314  R   85  6  195  0  1
26     30     4100  215  R   8200  320  R      0   0     6750   26 R   2150  267  R      0    0     7250  318  R   91  6  198  0  1
26     50     4100  219  R   8650  320  R      0   0     7050   26 R   2100  273  R      0    0     7650  318  R   90  6  184  0  1
26    110     4000  221  R   9200  320  R      0   0     7450   26 R   2100  286  R      0    0     8100  322  R   85  8  184  0  1
26    130     3950  226  R   9750  324  R      0   0     7850   27 R   2300  302  R      0    0     8600  324  R   95  8  180  0  1
26    150     3800  235  R  10550  324  R      0   0     8650   26 R   2650  316  R      0    0     9250  325  R   85  9  187  0  1
26    210     3900  240  R  11200  326  R      0   0     9200   28 R   3000  326  R      0    0     9850  329  R   90  9  186  0  1
26    230     4000  245  R  11800  325  R      0   0     9750   28 R   3450  333  R      0    0    10350  329  R   85  9  199  0  1
26    250     4100  250  R  12550  327  R      0   0    10050   28 R   3700  337  R      0    0    10950  331  R   85 10  196  0  1
26    330     4650  259  R  14000  325  R      0   0    11950   25 R   4650  339  R      0    0    12100  330  R   95  8  185  0  1
26    350     4850  264  R  14850  326  R      0   0    11500   25 R   5150  342  R      0    0    12600  331  R   80 11  185  0  1
26    410     5400  269  R  15500  326  R      0   0    11900   25 R   5600  343  R      0    0    13250  332  R   90 10  195  0  1
26    450     6200  285  R  16600  333  R      0   0    12700   32 R   6550  354  R      0    0    14000  340  R   90 12  191  0  1
26    510     6700  289  R  17450  334  R      0   0    13000   33 R   7050  355  R      0    0    14700  340  R   90 10  193  0  1
26    530     7250  292  R  19500  333  R      0   0    13050   32 R   7500  352  R      0    0    15500  339  R   90 11  198  0  1
26    550     7750  293  R  19000  332  R      0   0    13950   30 R   8050  352  R      0    0    16000  339  R   90 12  197  0  1
26    610     8250  296  R  19300  332  R      0   0    14400   30 R   8500  352  R      0    0    16750  339  R   90 14  196  0  1
26    650     9200  292  R  21300  325  R      0   0    15200   24 R   9300  347  R      0    0    18050  331  R   90 10  199  0  1
26    730    10350  290  R  22900  318  R      0   0    16300   21 R  10150  340  R      0    0    19650  325  R   95 15  206  0  1
26    750    10700  290  R  23350  318  R      0   0    16150   23 R  10500  345  R      0    0    20000  323  R   90 12  212  0  1
26    810    11200  290  R  24250  316  R      0   0    16400   23 R  10750  346  R      0    0    21250  323  R   90 16  210  0  1
```

(continued)

```
26   850    10200  297 R   23350  326 R      0    0        0    0 R    9400    1 R      0    0    19550  334 R   340 26   325  3  1
26   910     9450  296 R   22400  326 R      0    0    15100   54 R    7850    9 R      0    0    17900  332 R   340 24     6  3  1
26   930     9300  285 R   21300  325 R      0    0    14350   59 R    6550   12 R      0    0    17450  335 R   340 26     4  3  1
26  1110    13125  250 R   19050  306 R      0    0    13600  106 R    2150  171 R      0    0    13200  314 R    90 16   221  6  1
26  1130    15100  256 R   21700  304 R      0    0    11800  105 R    2500  224 R      0    0    15200  310 R   230 20   105  3  1
26  1150    19200  260 R   25575  300 R      0    0     8525  115 R    5625  255 R      0    0    18875  304 R   235 16   102  4  1
26  1210    22925  265 R       0    0        0    0     5050  130 R    9150  266 R      0    0        0    0     235 14   110  4  1
26  1230    26500  271 R   34650  296 R      0    0     2100  141 R   12400  276 R      0    0    27050  301 R   190 12   145  4  1
26  1250    28900  274 R       0    0        0    0        0    0     14175  282 R      0    0        0    0     280 21   280  6  2
26  1310    28050  276 R       0    0        0    0        0    0     13350  285 R      0    0        0    0     280 21   275  6  2
26  1330    23400  277 R       0    0        0    0        0    0      8700  285 R      0    0        0    0      30 28   278  6  1
26  1350    16000  270 R       0    0        0    0        0    0      2600  286 R      0    0        0    0      95 29   292  8  1
26  1410        0    0         0    0        0    0        0    0         0    0        0    0        0    0       0  0     0  0  2
26  1430        0    0         0    0        0    0        0    0         0    0        0    0        0    0       0  0     0  0  2
26  1450        0    0         0    0        0    0        0    0         0    0        0    0        0    0       0  0     0  0  2
26  1510        0    0         0    0        0    0        0    0         0    0        0    0        0    0       0  0     0  0  2
26  1530        0    0         0    0        0    0        0    0         0    0        0    0        0    0       0  0     0  0  2
26  1550        0    0         0    0        0    0        0    0         0    0        0    0        0    0       0  0     0  0  2
26  1610        0    0         0    0        0    0        0    0         0    0        0    0        0    0       0  0     0  0  2
26  1630        0    0         0    0        0    0        0    0         0    0        0    0        0    0       0  0     0  0  2
26  1650        0    0         0    0        0    0        0    0         0    0        0    0        0    0       0  0     0  0  2

           14 OBSERVATIONS              EVSAR 2/71           RUN 2

26  1710        0    0         0    0        0    0        0    0         0    0        0    0        0    0       0  0     0  0  2
26  1730     6650  160 R   10250  343 R      0    0     2500  161 R       0    0        0    0     7900   59 R     0 18   331  2  1
26  1750     8400  163 R    9150  342 R      0    0     4450  157 R       0    0        0    0     8200   66 R     0 18   329  2  1
26  1810    10250  163 R    7200  343 R      0    0     6550  156 R       0    0        0    0     8350   84 R   350 22   337  2  1
26  1830    12100  158 R    5950  347 R      0    0     9250  150 R       0    0        0    0     9300   90 R   335 22   326  2  1
26  1850    14000  153 R    4300  350 R      0    0    11400  148 R       0    0        0    0    10500   95 R   150 11   152  2  1
26  1910    11800  147 R    4500  328 R      0    0     9500  140 R       0    0        0    0     8500   72 R     0  0   152  2  2
26  1930     9400  151 R    9700  322 R      0    0     7400  145 R       0    0        0    0     7900   56 R   180 12   140  2  1
26  1950     6000  173 R   14100  328 R      0    0     4000  168 R       0    0        0    0     7800   32 R   130  6   156 11  1
26  2010     2300  178 R   16100  330 R      0    0        0    0         0    0        0    0    10500   16 R   355 20   340  2  1
26  2030     6650  158 R   12800  322 R      0    0        0    0         0    0        0    0     8600   46 R     0 26   332  7  1
26  2050        0    0         0    0        0    0        0    0         0    0        0    0        0    0       0  0     0  0  2
26  2110        0    0         0    0        0    0        0    0         0    0        0    0        0    0       0  0     0  0  2
26  2130        0    0         0    0        0    0        0    0         0    0        0    0        0    0       0  0     0  0  2

           56 OBSERVATIONS              EVSAR 2/71           RUN 3

26  2150        0    0         0    0        0    0        0    0         0    0        0    0        0    0       0  0     0  0  2
26  2210    22300  155 R    2050  186 R      0    0     3200  230 R    1100  311 R      0    0    14950  126 R   211 10   135  6  1
26  2230    19850  163 R    4800  268 R      0    0     6475  260 R    4025  287 R      0    0    10825  124 R    98 18   225  0  1
26  2250    19500  160 R    4750  275 R      0    0     5950  257 R    4700  287 R      0    0    10550  120 R    90 12   245  0  1
26  2310    19425  160 R    4750  285 R      0    0     5575  258 R    4450  290 R      0    0    10600  120 R    90 10   256  0  1
26  2330    19175  160 R    5000  290 R      0    0     5300  253 R    4350  289 R      0    0    10500  116 R   110 11   244  0  1
26  2350    19000  158 R    5350  295 R      0    0     5050  250 R    4400  288 R      0    0    10425  114 R   111 14   239  0  1
27    10    18825  155 R    5475  296 R      0    0     4800  243 R    4300  286 R      0    0    10275  110 R    95 16   244  0  1
27    30    18575  156 R    5875  304 R      0    0     4450  241 R    4025  289 R      0    0    10250  109 R   100 18   240  0  1
27    50    18600  155 R    6350  309 R      0    0     4350  236 R    4150  287 R      0    0    10200  108 R    90 12   235  0  1
27   110    18400  156 R    6800  313 R      0    0     4050  234 R    3900  290 R      0    0     9950  107 R   100 12   230  0  1
27   130    18150  155 R    7400  315 R      0    0     3850  228 R    3750  289 R      0    0     9850  102 R   105  8   237  0  1
27   150    17750  151 R    7900  312 R      0    0     3650  218 R    3600  289 R      0    0     9850   97 R   100 12   227  0  1
27   210    17350  153 R    8300  317 R      0    0     3350  212 R    3650  295 R      0    0     9800   97 R   105 10   256  0  1
27   230    17250  153 R    9700  318 R      0    0     3000  200 R    3550  294 R      0    0     9700   94 R    90  8   253  0  1
27   250    16750  152 R    9250  320 R      0    0     2950  193 R    3650  296 R      0    0     9500   91 R    90 10   251  0  1
```

NOTE1*** THE FIGURES 999 IN THE DROGUE OR DRIFT OBJECT BEARING IS A SPECIAL
CODE USED IN SOME CASES DURING DATA PROCESSING TO INDICATE MISSING DATA.

ABREVIATIONS

NOTE2*** WIND DATA CODE EXPLAINATION**
0= RELATIVE WIND RECORDED IN DEGREES TRUE
1= RELATIVE WIND RECORDED RELATIVE TO SHIP HEAD
2= QUESTIONABLE WIND DATA
3= NO WIND DATA RECORDED
4= WIND RECORDED IN DEGREES TRUE

WDC= WIND DATA CODE
CO1= CURRENT DROGUE 1
CO2= CURRENT DROGUE 2
HOW= HOW BEARINGS WERE OBTAINED
R= RADAR
V= VISUAL
A= ALONGSIDE

		REFERENCE		H O W	CD-1		H O W	7-MAN RAFT		H O W	15FT BOAT		H O W	18FT BOAT		H O W	30FT BOAT		H O W	CD-2		H O W	REL. WIND		SHIP		W D C
DAY	TIME(Z)	RANGE	BRG		RANGE	BRG		RANGE	BRG		RANGE	BRG		RANGE	BRG		RANGE	BRG		RANGE	BRG		DIR	SPD	CRS	SPD	
27	310	16450	153	R	9800	320	R	0	0		3050	186	R	3650	293	R	0	0		9250	88	R	100	10	242	0	1
27	330	16000	152	R	10300	321	R	0	0		3200	180	R	3650	291	R	0	0		9100	86	R	100	12	245	0	1
27	350	15950	154	R	10850	322	R	0	0		3250	177	R	3650	291	R	0	0		8850	83	R	120	10	223	0	1
27	410	14900	155	R	11750	323	R	0	0		3300	176	R	3800	292	R	0	0		8500	79	R	90	10	255	0	1
27	430	14400	154	R	12350	321	R	0	0		3300	172	R	3900	287	R	0	0		8150	74	R	90	11	239	0	1
27	450	13300	154	R	12800	321	R	0	0		3250	167	R	3400	290	R	0	0		8400	70	R	90	10	247	0	1
27	510	12600	155	R	13550	323	R	0	0		3250	164	R	3200	293	R	0	0		8000	65	R	90	10	247	0	1
27	530	12050	154	R	14000	324	R	0	0		3300	165	R	3100	300	R	0	0		7900	62	R	60	10	255	0	1
27	550	11550	157	R	14700	325	R	0	0		3050	162	R	3050	304	R	0	0		7950	56	R	120	10	238	0	1
27	610	11300	157	R	15400	326	R	0	0		2900	162	R	2950	307	R	0	0		8050	51	R	100	8	253	0	1
27	630	10650	156	R	15850	325	R	0	0		2550	157	R	2900	315	R	0	0		8300	44	R	90	10	250	0	1
27	650	10000	157	R	16350	324	R	0	0		2300	152	R	2900	321	R	0	0		8060	39	R	90	10	235	0	1
27	710	9600	157	R	17000	326	R	0	0		2100	145	R	2800	325	R	0	0		8900	40	R	90	8	227	0	1
27	730	9200	156	R	17850	326	R	0	0		2200	134	R	2900	332	R	0	0		9550	36	R	90	8	237	0	1
27	750	9000	157	R	18100	327	R	0	0		2350	124	R	2700	337	R	0	0		10000	30	R	110	10	239	0	1
27	810	8600	155	R	18250	327	R	0	0		2300	124	R	2450	338	R	0	0		10850	30	R	151	10	243	0	1
27	830	8350	156	R	18550	327	R	0	0		2400	129	R	2350	335	R	0	0		10600	25	R	95	10	252	0	1
27	850	7975	156	R	18825	326	R	0	0		2150	131	R	1850	328	R	0	0		10925	25	R	100	12	246	0	1
27	910	7650	156	R	19075	326	R	0	0		2100	134	R	1825	325	R	0	0		11300	22	R	95	10	246	0	1
27	930	7400	159	R	19450	329	R	0	0		2100	138	R	1775	329	R	0	0		11725	23	R	90	11	265	0	1
27	950	7150	157	R	20050	327	R	0	0		2100	135	R	1725	329	R	0	0		12100	20	R	100	12	248	0	1
27	1010	6925	156	R	20200	328	R	0	0		2250	134	R	1650	337	R	0	0		12500	19	R	115	10	255	0	1
27	1030	6750	155	R	21475	326	R	0	0		2350	131	R	1775	339	R	0	0		12800	18	R	135	10	242	0	1
27	1050	6575	157	R	20900	328	R	0	0		2300	133	R	1925	344	R	0	0		13100	19	R	110	6	250	0	1
27	1110	8775	151	R	19100	326	R	0	0		5050	137	R	1800	120	R	0	0		11950	24	R	25	18	327	8	1
27	1130	15875	150	R	13750	326	R	0	0		10050	142	R	6800	137	R	0	0		10525	49	R	25	16	328	8	1
27	1150	17650	142	R	10125	322	R	0	0		13950	136	R	10575	135	R	0	0		10575	63	R	30	12	329	6	1
27	1210	20600	141	R	7200	321	R	0	0		0	0		13625	135	R	0	0		11600	77	R	40	12	331	6	1
27	1230	23175	140	R	4250	324	R	0	0		0	0		16325	135	R	0	0		13450	86	R	45	14	336	6	1
27	1250	0	0		0	0		0	0		0	0		0	0		0	0		0	0		0	0	0	0	2
27	1310	27600	139	R	0	0		0	0		0	0		20830	138	R	0	0		14750	97	R	330	18	99	6	1
27	1330	23050	162	R	0	0		0	0		0	0		15730	169	R	0	0		5650	121	R	315	14	116	6	1
27	1350	0	0		0	0		0	0		0	0		0	0		0	0		0	0		0	8	0	0	2
27	1410	0	0		0	0		0	0		0	0		0	0		0	0		0	0		0	0	0	0	2
27	1430	15350	175	R	0	0		0	0		12450	181	R	9400	195	R	0	0		0	0		0	4	190	8	1
27	1450	9100	185	R	0	0		0	0		6050	202	R	4750	244	R	0	0		0	0		310	6	150	8	1
27	1510	2050	229	R	0	0		0	0		3700	295	R	6950	315	R	0	0		0	0		330	5	197	8	1
27	1530	5150	17	R	0	0		0	0		9150	20	R	11200	351	R	0	0		0	0		30	8	222	8	1
27	1550	0	0		0	0		0	0		0	0		0	0		0	0		0	0		0	0	0	0	2
27	1610	0	0		0	0		0	0		0	0		0	0		0	0		0	0		0	0	0	0	2

(continued)

```
          46 OBSERVATIONS            EVSAR 2/71          RUN 4

27  1630   7500  32 R   1650 184 R   0  0   8850  13 R  10850   6 R     0    0     2300 155 R  100  2 253  0  1
27  1650   7550  36 R   1900 169 R   0  0   8900  16 R   7650   7 R     0    0     2350 147 R   45  8 340  0  1
27  1710   7200  44 R   3250 162 R   0  0   7950  19 R   9630   7 R     0    0     3550 148 R   46  8 340  0  1

27  1730   7150  50 R   3250 163 R   0  0   7700  29 R   9250  14 R     0    0     3450 153 R    0  0   0  0  2
27  1750   7250  50 R   3550 177 R   0  0   7450  20 R   9550  14 R     0    0     3200 157 R    0  0   0  0  2
27  1810   7550  60 R   3500 159 R   0  0   8000  30 R   9400  14 R     0    0     3500 147 R  350  1 251  0  1
27  1830   7600  50 R   3700 160 R   0  0   8050  22 R   9550  11 R     0    0     3000 148 R    0  0   0  0  1
27  1850  10950  34 R   2900  14 R   0  0  10500  19 R  13200  14 R     0    0     3750  15 R  360  5 190  7  1
27  1910  16450  20 R   8700   0 R   0  0      0   0        0   0       0    0     9400   3 R  360  5 180  7  1
27  1930      0   0        0   0     0  0      0   0        0   0       0    0        0   0       0  0   0  0  1
27  1950  10900  49 R   3500 104 R   0  0  10700  25 R  11900  16 R     0    0     3500  92 R    0  0   0  0  1
27  2010  10500  65 R   5400 110 R   0  0   9800  26 R  10700  14 R  5100  217 R   4950 110 R  120  2  47  0  1
27  2030  10350  63 R   5450 120 R   0  0   9600  28 R  10700  16 R     0    0     4650 109 R  120  4  47  0  1
27  2050   9750  59 R   4950 119 R   0  0   9225  20 R  10500   9 R  5050  160 R   4125 105 R  360 10 178  3  1
27  2110  10650  48 R   2400  80 R   0  0  12700  17 R  14300  10 R  8450  157 R   3030  51 R   30  8 170  6  1
27  2130  11650  36 R   2300  22 R   0  0  15200   6 R  17000   1 R  4775  155 R   4400  11 R   10 14 172  6  1
27  2150      0   0        0   0     0  0      0   0        0   0       0    0        0   0       0  0   0  0  2
27  2210      0   0        0   0     0  0      0   0        0   0       0    0        0   0       0  0   0  0  2
27  2230      0   0        0   0     0  0      0   0        0   0       0    0        0   0       0  0   0  0  2
27  2250      0   0        0   0     0  0      0   0        0   0       0    0        0   0       0  0   0  0  2
27  2310      0   0        0   0     0  0      0   0        0   0       0    0        0   0       0  0   0  0  2
27  2330      0   0        0   0     0  0      0   0        0   0       0    0        0   0       0  0   0  0  2
27  2350      0   0        0   0     0  0      0   0        0   0       0    0        0   0       0  0   0  0  2
28    10      0   0        0   0     0  0      0   0        0   0       0    0        0   0       0  0   0  0  2
28    30  10250  52 R   3500  14 R   0  0  18300  18 R  19650  13 R     0    0     6900   3 R  315 10 331 10  1
28    50  11250  85 R   4550 113 R   0  0  16050  36 R  16300  28 R     0    0     3950  61 R  315 10 331 10  1
28   110  13100 102 R   8900 138 R   0  0  13500  52 R  13300  42 R     0    0     5400 118 R  300 10  20 10  1
28   130  12800 120 R  11200 160 R   0  0  11150  66 R   9800  53 R     0    0 A   6850 158 R    0  0   0  0  2
28   150  15950 120 R  13500 146 R   0  0  11950  70 R  10950  57 R  2850  118 R   9500 141 R    0  0   0  0  2
28   210  15550 126 R  13200 157 R   0  0  11850  74 R  11000  63 R  2400  122 R   9000 152 R   60 10 127  0  1
28   230  15400 130 R  13000 158 R   0  0  11800  72 R  11100  60 R  2200  120 R   8550 153 R   75  8 108  0  1
28   250  15500 134 R  13050 162 R   0  0  11750  73 R  11200  58 R  2050  116 R   8400 156 R   95 10  99  0  1
28   310  15550 135 R  13100 163 R   0  0  11600  71 R  11300  57 R  1900  118 R   8300 158 R   90  8 110  0  1
28   330  15500 138 R  13100 165 R   0  0  12500  72 R  11200  57 R  1700  118 R   8050 152 R   85  8 105  0  1
28   350      0   0        0   0     0  0      0   0        0   0       0    0        0   0       0  0   0  0  1
28   410  17600 146 R  15400 171 R   0  0  10800  82 R  10150  65 R  3150  152 R  10150 168 R   60 10 138  0  1
28   430  17650 149 R  15250 173 R   0  0  10600  81 R  10000  64 R  3050  152 R   9950 172 R   90  8 108  0  1
28   450  17600 149 R  15200 174 R   0  0  10150  77 R   9800  62 R  2950  150 R   9700 172 R   90  8 121  0  1
28   510  17700 151 R  15300 178 R   0  0   9850  76 R   9600  58 R  1200  154 R   9750 176 R   90  8 126  0  1
28   530  17800 154 R  15000 179 R   0  0   9200  75 R   9600  58 R  2600  156 R   9400 178 R   90  8 125  0  1
28   550  17800 156 R  14000 182 R   0  0   8900  71 R  10000  53 R     0    0     9300 181 R   90  8 127  0  1
28   610  18000 159 R  14800 187 R   0  0   8500  69 R   9500  52 R     0    0     9300 186 R   90  8 115  0  1
28   630  18000 161 R  14700 187 R   0  0   8100  68 R   9600  48 R     0    0     9300 186 R   90  8 129  0  1
28   650  18200 165 R  14950 191 R   0  0   7750  63 R   9450  46 R     0    0     9350 191 R   90  8 124  0  1
28   710  18250 166 R  14700 164 R   0  0   7500  58 R   9500  46 R     0    0     9350 194 R   90  8 120  0  1
28   730  18500 169 R  14500 196 R   0  0   7400  54 R   9800  43 R     0    0     9500 197 R   90  8 126  0  1

          86 OBSERVATIONS            EVSAR 2/71          RUN 5

28   750  18900 171 R  13850 203 R   0  0   7350  51 R   9750  39 R     0    0     9850 203 R   90 10 125  0  1
28   810  18900 172 R  14500 201 R   0  0   7200  46 R   9700  40 R     0    0     9900 203 R   90 10 133  0  1
28   830  19150 176 R  14950 205 R   0  0   7400  41 R   9800  36 R     0    0    10250 207 R   90 10 132  0  1
28   850  19450 177 R  14750 206 R   0  0   7350  40 R   9900  37 R  2050  216 R  10400 208 R   90 12 135  0  1
28   910  19950 179 R  14950 207 R   0  0   7300  38 R   9850  38 R  2200  217 R  10700 209 R   80 12 135  0  1
28   930  20400 178 R  15050 209 R   0  0   7200  35 R   9810  38 R  2400  220 R  11150 210 R   85 12 128  0  1
28   950  21000 180 R  15350 211 R   0  0   7200  32 R   9950  36 R  2450  224 R  11350 211 R   90  8 128  0  1
28  1010  21350 180 R  15600 211 R   0  0   7300  30 R  10000  38 R  2700  230 R  11700 212 R   80 14 120  0  1
28  1030  22100 184 R  16100 211 R   0  0   7200  27 R   9800  39 R     0    0    12200 213 R   80 12 110  0  1
28  1050  22900 183 R  16400 211 R   0  0   7200  24 R   9650  41 R  3000  236 R  12700 213 R   80 12 115  0  1
28  1110  23500 184 R  16850 213 R   0  0   7000  22 R   9400  42 R     0    0    13250 215 R   80 12 127  0  1
28  1130  25150 185 R      0   0     0  0   5350   2 R   7650  40 R  5200  217 R  15050 213 R  185 10  45  5  1
29  2330  10375 322 R   2125 316 R   0  0   9050 223 R   7275 257 R     0    0        0   0     250 12 335  0  1
```

NOTE1*** THE FIGURES 999 IN THE DROGUE OR DRIFT OBJECT BEARING IS A SPECIAL
CODE USED IN SOME CASES DURING DATA PROCESSING TO INDICATE MISSING DATA.

ABREVIATIONS

NOTE2*** WIND DATA CODE EXPLAINATION**
0= RELATIVE WIND RECORDED IN DEGREES TRUE
1= RELATIVE WIND RECORDED RELATIVE TO SHIP HEAD
2= QUESTIONABLE WIND DATA
3= NO WIND DATA RECORDED
4= WIND RECORDED IN DEGREES TRUE

WDC= WIND DATA CODE
CD1= CURRENT DROGUE 1
CD2= CURRENT DROGUE 2
HOW= HOW BEARINGS WERE OBTAINED
R= RADAR
V= VISUAL
A= ALONGSIDE

		REFERENCE			CD-1			7-MAN RAFT			16FT BOAT			18FT BOAT			30FT BOAT			CD-2			REL. WIND		SHIP		
DAY	TIME(Z)	RANGE	BRG	HOW	RANGE	BRG	HOW	RANGE	BRG	HOW	RANGE	BRG	HOW	RANGE	BRG	HOW	RANGE	BRG	HOW	RANGE	BRG	HOW	DIR	SPD	CRS	SPD	WDC
28	2350	10550	319	R	2250	304	R	0	0		8850	222	R	7150	263	R	0	0		0	0		240	16	345	0	1
1	10	10600	318	R	2550	295	R	0	0		8725	221	R	7000	259	R	0	0		0	0		240	13	336	0	1
1	30	10150	325	R	1750	320	R	0	0		7375	212	R	5500	258	R	0	0		0	0		0	24	240	7	1
1	50	10450	354	R	5700	51	R	0	0		4600	143	R	2450	45	R	0	0		0	0		345	28	256	7	1
1	110	11600	5	R	8100	52	R	0	0		5500	114	R	4400	45	R	0	0		0	0		45	18	177	0	1
1	130	11600	2	R	7600	43	R	0	0		5250	113	R	4750	42	R	0	0		0	0		90	12	150	0	1
1	150	11800	0	R	7250	45	R	0	0		5950	110	R	4750	34	R	0	0		0	0		85	10	149	0	1
1	210	11900	357	R	6850	41	R	0	0		5000	107	R	5150	35	R	0	0		0	0		75	14	151	0	1
1	230	12150	356	R	6600	38	R	0	0		4950	104	R	5450	34	R	0	0		0	0		75	14	157	0	1
1	250	9400	356	R	0	0		0	0		0	0		0	0		0	0	A	0	0		0	0	0	0	2
1	310	0	0		0	0		0	0		0	0		0	0		0	0	A	0	0		0	0	0	0	2
1	330	8950	352	R	4900	67	R	0	0		7950	119	R	5450	68	R	0	0	A	0	0		0	0	0	0	2
1	350	9300	353	R	4450	68	R	0	0		7800	121	R	5500	67	R	0	0		0	0		75	14	150	0	1
1	410	9450	349	R	3850	57	R	0	0		7650	120	R	5500	67	R	0	0		0	0		80	14	147	0	1
1	430	9550	346	R	3500	63	R	0	0		7550	121	R	5450	64	R	0	0		0	0		80	12	153	0	1
1	450	9950	342	R	3100	56	R	0	0		7050	115	R	5400	60	R	0	0		0	0		90	10	153	0	1
1	510	10200	341	R	2850	47	R	0	0		6700	114	R	5400	56	R	0	0		0	0		90	10	154	0	1
1	530	10800	339	R	3600	35	R	0	0		6100	109	R	5500	52	R	0	0		0	0		90	10	156	0	1
1	550	11300	347	R	3600	24	R	0	0		5700	106	R	5600	49	R	0	0		0	0		90	10	157	0	1
1	610	10800	335	R	2350	42	R	0	0		6800	106	R	5750	60	R	0	0		0	0		90	10	157	0	1
1	630	8300	335	R	0	0		0	0		0	0		0	0		0	0		0	0		0	0	0	0	2
1	650	8300	335	R	2250	59	R	0	0		8450	115	R	6400	80	R	0	0	A	0	0		120	10	170	0	1
1	710	9100	334	R	2200	55	R	0	0		7900	116	R	6200	82	R	0	0	A	0	0		90	8	170	0	1
1	730	9100	332	R	1750	54	R	0	0		7550	114	R	6200	79	R	0	0	A	0	0		90	8	170	0	1
1	750	10300	329	R	0	0		0	0		7200	110	R	6400	71	R	0	0	A	0	0		90	8	170	0	1
1	810	14200	338	R	4100	355	R	0	0		6600	69	R	8400	42	R	0	0	A	0	0		30	10	200	0	1
1	830	14450	335	R	4050	352	R	0	0		6500	66	R	8550	41	R	0	0	A	0	0		0	0	154	0	2
1	850	15200	345	R	4450	344	R	0	0		6700	60	R	8700	36	R	0	0	A	0	0		80	2	161	0	1
1	910	15675	334	R	4325	342	R	0	0		6675	56	R	8950	34	R	0	0	A	0	0		75	4	154	0	1
1	930	16100	332	R	4975	339	R	0	0		6775	50	R	9250	32	R	0	0	A	0	0		90	6	162	0	1
1	950	16650	333	R	5375	336	R	0	0		7000	46	R	9600	29	R	0	0	A	0	0		65	10	155	0	1
1	1010	16900	333	R	5550	334	R	0	0		7250	44	R	9850	27	R	0	0	A	0	0		70	6	154	0	1
1	1030	17275	334	R	5750	333	R	0	0		7500	41	R	10175	28	R	0	0	A	0	0		75	10	157	0	1
1	1050	17500	333	R	5875	330	R	0	0		7700	40	R	10425	27	R	0	0	A	0	0		75	10	161	0	1
1	1110	17825	334	R	6075	330	R	0	0		8000	36	R	10700	27	R	0	0	A	0	0		80	10	155	0	1
1	1130	17950	333	R	6200	331	R	0	0		8150	36	R	10950	27	R	0	0	A	0	0		81	11	156	0	1
1	1150	18250	332	R	6675	327	R	0	0		8450	34	R	0	0		0	0	A	0	0		70	11	153	0	1
1	1210	18525	332	R	6700	326	R	0	0		8750	33	R	11625	27	R	0	0	A	0	0		65	10	157	0	1
1	1230	18025	325	R	6775	304	R	0	0		6775	28	R	9700	24	R	0	0	A	0	0		300	6	1	8	1
1	1250	13550	310	R	6150	246	R	0	0		3700	109	R	5000	66	R	0	0	A	0	0		270	8	359	6	1
1	1310	12150	299	R	7400	228	R	0	0		4750	134	R	4850	90	R	0	0	A	0	0		250	10	327	0	1
1	1330	12150	300	R	8000	230	R	0	0		4750	135	R	4750	92	R	0	0	A	0	0		240	12	338	0	1
1	1350	12400	298	R	8550	229	R	0	0		4750	138	R	4850	95	R	0	0	A	0	0		225	10	342	0	1
1	1410	12600	294	R	8950	229	R	0	0		4750	138	R	4900	96	R	0	0	A	0	0		230	10	345	0	1
1	1430	12850	294	R	9350	226	R	0	0		4700	142	R	4900	100	R	0	0	A	0	0		240	12	333	0	1
1	1450	13300	293	R	10100	226	R	0	0		4850	143	R	5050	98	R	0	0	A	0	0		240	10	338	0	1
1	1510	13400	292	R	10450	225	R	0	0		4750	145	R	4900	100	R	0	0	A	0	0		235	10	328	0	1

(continued)

```
1  1530  13800 299 R  10400 225 R   0  0   4650 145 R   4850 105 R      0   0 A   0  0  235 12 339 0 1
1  1550  14250 296 R  11400 227 R   0  0   4900 147 R   5050 105 R      0   0 A   0  0  240 12 337 0 1
1  1610  14400 289 R  11700 227 R   0  0   4750 148 R   4900 109 R      0   0 A   0  0  240 12 335 0 1
1  1630  14850 287 R  12250 225 R   0  0   4850 152 R   4900 110 R      0   0 A   0  0  240 16 333 0 1
1  1650  15200 285 R  12700 226 R   0  0   5150 153 R   5000 114 R      0   0 A   0  0  240 16 341 0 1
1  1710  15600 282 R  13200 226 R   0  0   5250 154 R   5150 117 R      0   0 A   0  0  240 16 345 0 1
1  1730  15950 282 R  13700 225 R   0  0   5400 156 R   5350 121 R      0   0 A   0  0  245 16 336 0 1
1  1750  16300 281 R  14000 227 R   0  0   5650 156 R   5450 123 R      0   0 A   0  0  245 16 340 0 1
1  1810  17600 280 R  14350 228 R   0  0   5800 157 R   5550 125 R      0   0 A   0  0  245 14 338 0 1
1  1830  17100 288 R  14950 227 R   0  0   6500 160 R   5700 127 R      0   0 A   0  0  245 12 333 0 1
1  1850  17400 288 R  15250 229 R   0  0   6250 159 R   5900 130 R      0   0 A   0  0  245 14 341 0 1
1  1910  18000 280 R  15700 232 R   0  0   6200 165 R   5700 136 R      0   0 A   0  0  340 14 343 0 1
1  1930  13800 270 R  13150 213 R   0  0   9300 134 R  10050 117 R   4500  95 R   0  0  335 26 265 0 1
1  1950  14050 275 R  13350 215 R   0  0   9500 136 R  10750 119 R   4450  97 R   0  0  240 12 338 0 1
1  2010  14250 275 R  13900 215 R   0  0   9700 139 R  10750 121 R   4450 100 R   0  0  240 10 345 0 1
1  2030  14650 273 R  14450 216 R   0  0  10050 140 R  10950 124 R   4350 116 R   0  0  240 10 338 0 1
1  2050  15100 273 R  14725 215 R   0  0  10125 140 R  11175 122 R   4225 109 R   0  0  235 14 337 0 1
1  2110  15525 271 R  15300 217 R   0  0  10400 142 R  11450 124 R   4375 111 R   0  0  240 19 334 0 1
1  2130  16125 270 R  15900 217 R   0  0  10700 143 R  11700 127 R   4400 115 R   0  0  240 18 333 0 1
1  2150  16575 270 R  16425 217 R   0  0  10900 146 R  11900 130 R   4375 119 R   0  0  280 16 343 0 1
1  2210  17200 260 R  16925 218 R   0  0  11100 144 R  12025 132 R   4400 123 R   0  0  265 14 333 0 1
1  2230  17800 260 R  17450 220 R   0  0  11275  48 R  12200 133 R   4375 124 R   0  0  265 14 351 0 1
1  2250  22075 277 R  18500 236 R   0  0   7550 163 R   7975 138 R      0   0 A   0  0  135 14 114 0 1
1  2310  22975 276 R  18800 237 R   0  0   7300 166 R   7800 139 R      0   0 A   0  0   98 12 141 0 1
1  2330  23650 277 R  18600 238 R   0  0   6475 169 R   5900 136 R      0   0     0  0   40 26 170 5 1
1  2350  27100 288 R  18700 260 R   0  0      0   0 A   3850  79 R      0   0     0  0   45 22 176 5 1

      64 OBSERVATIONS           FVSAR 2/71          RUN 6

2    10  27700 290 R  18975 263 R   0  0      0   0 A   4000  68 R      0   0     0  0  235 25 345 0 1
2    50      0   0        0   0     0  0      0   0        0   0        0   0     0  0    0  0   0 0 2
2   110      0   0        0   0     0  0      0   0        0   0        0   0     0  0    0  0   0 0 2
2   130      0   0        0   0     0  0      0   0        0   0        0   0     0  0    0  0   0 0 2
2   150      0   0        0   0     0  0      0   0        0   0        0   0     0  0    0  0   0 0 2
2   210      0   0        0   0     0  0      0   0        0   0        0   0     0  0    0  0   0 0 2
2   230      0   0        0   0     0  0      0   0        0   0        0   0     0  0    0  0   0 0 2
2   250      0   0        0   0     0  0      0   0        0   0        0   0     0  0    0  0   0 0 2
2   310      0   0        0   0     0  0      0   0        0   0        0   0     0  0    0  0   0 0 2
2   330      0   0        0   0     0  0      0   0        0   0        0   0     0  0    0  0   0 0 2
2   350      0   0        0   0     0  0      0   0        0   0        0   0     0  0    0  0   0 0 2
2   410      0   0        0   0     0  0      0   0        0   0        0   0     0  0    0  0   0 0 2
2   430   8200 328 R   7700 140 R   0  0   2800 178 R   3550 151 R      0   0     0  0   80 16 147 0 1
2   450   7400 323 R   8050 145 R   0  0   3750 160 R   4450 147 R   1400 135 R   0  0  350 20 272 0 1
2   510   7200 322 R   8600 144 R   0  0   4300 167 R   4300 143 R   1650 129 R   0  0  240 16 331 0 1
2   530   7250 317 R   8900 147 R   0  0   4550 154 R   4550 140 R   1750 134 R   0  0  240 18 335 0 1
2   550   7500 312 R   9100 151 R   0  0   4750 159 R   4750 141 R   1950 138 R   0  0  240 16 335 0 1
2   610   7500 309 R   9250 157 R   0  0   5050 158 R   5050 140 R   2200 142 R   0  0  240 18 335 0 1
2   630   7700 305 R   9500 160 R   0  0   5000 165 R   5000 140 R   2000 143 R   0  0  240 18 334 0 1
2   650   7800 301 R  10000 164 R   0  0   5600 177 R   5600 137 R   2150 146 R   0  0  240 18 332 0 1
2   710   8100 299 R  10300 166 R   0  0   6000 174 R   6000 136 R   2600 150 R   0  0  240 18 332 0 1
2   730   8450 296 R  10650 167 R   0  0   6500 155 R   6500 138 R   2250 120 R   0  0  240 18 332 0 1
2   750   8850 292 R  11250 170 R   0  0   6800 155 R   6800 139 R   2500 160 R   0  0  240 18 332 0 1
2   810   9200 293 R  11500 176 R   0  0   7150 137 R   5250 121 R   3500  94 R   0  0  260 18 333 0 1
2   830   9300 285 R  11900 179 R   0  0   7500 137 R   5450 123 R   3500  94 R   0  0  260 18 333 0 1
2   850   9875 285 R  12775 179 R   0  0   8100 139 R   5300 122 R      0   0     0  0  240 18 340 0 1
2   910  10325 282 R  13000 183 R   0  0   8625 136 R   5750 119 R      0   0     0  0  250 18 335 0 1
2   930  10700 280 R  13550 185 R   0  0   9175 139 R   5700 122 R      0   0     0  0  270 16 342 0 1
2   950  11150 278 R  14125 186 R   0  0   9725 140 R   5750 124 R      0   0     0  0  270 18 348 0 1
```

```
NOTE1***  THE FIGURES 999 IN THE DROGUE OR DRIFT OBJECT BEARING IS A SPECIAL
          CODE USED IN SOME CASES DURING DATA PROCESSING TO INDICATE MISSING DATA.          **ABREVIATIONS**

NOTE2***  WIND DATA CODE EXPLAINATION**                                                  WDC= WIND DATA CODE
      0= RELATIVE WIND RECORDED IN DEGREES TRUE                                           CD1= CURRENT DROGUE 1
      1= RELATIVE WIND RECORDED RELATIVE TO SHIP HEAD                                     CD2= CURRENT DROGUE 2
      2= QUESTIONABLE WIND DATA                                                           HOW= HOW BEARINGS WERE OBTAINED
      3= NO WIND DATA RECORDED                                                              R= RADAR
      4= WIND RECORDED IN DEGREES TRUE                                                      V= VISUAL
                                                                                            A= ALONGSIDE

                         H             H   7-MAN    H              H              H               H             H    REL.          W
              REFERENCE  O     CD-1    O   RAFT     O  16FT BOAT   O  18FT BOAT   O  30FT BOAT    O    CD-2     O    WIND   SHIP   D
DAY  TIME(Z)  RANGE BRG  W  RANGE BRG  W  RANGE BRG  W  RANGE  BRG  W  RANGE ERG  W  RANGE  BRG   W  RANGE BRG  W  DIR SPD CRS SPD C

 2    1010    11550 277  R  14650 189  R     0    0     10050  141  R   5725 125  R      0    0        0    0     250 16  352  0  1
 2    1030    11900 275  R  15250 191  R     0    0     10600  141  R   6100 124  R      0    0        0    0     245 14  347  0  1
 2    1050    12250 277  R  15150 191  R     0    0     10575  140  R   5930 118  R   5050  160  R     0    0      80 12  156  3  1
 2    1110    14100 289  R  13000 201  R     0    0      7975  144  R   4625  90  R   2500  155  R     0    0      65 17  134  0  1
 2    1130    14750 289  R  13075 204  R     0    0      7875  134  R   4600  82  R   2150  156  R     0    0      65 17  168  0  1
 2    1150    15450 290  R  13150 207  R     0    0      7625  132  R   4700  75  R   1825  156  R     0    0      85 12  150  0  1
 2    1210    16050 291  R  13300 211  R     0    0      7350  132  R   4875  65  R   1400  159  R     0    0      80 12  164  0  1
 2    1230    16725 292  R  13475 214  R     0    0      7075  130  R   5050  60  R   1150  159  R     0    0      80 12  157  0  1
 2    1250    17700 292  R  14100 219  R     0    0      6900  135  R   5450  56  R    700  163  R     0    0      80 10  155  0  1
 2    1310    18000 291  R  14350 218  R     0    0      6550  138  R   5700  54  R    500  179  R     0    0      80 10  155  0  1
 2    1330    18750 294  R  14300 225  R     0    0      6050  138  R   5800  43  R    300  255  V     0    0      80 14  127  0  1
 2    1350    19800 295  R  14850 228  R     0    0      5550  136  R   6200  39  R    700  290  R     0    0      80 11  158  0  1
 2    1410    20400 296  R  15150 230  R     0    0      5300  136  R   6500  37  R   1050  303  R     0    0      80 10  150  0  1
 2    1430    21050 296  R  15350 232  R     0    0      5050  137  R   7000  32  R   1400  310  R     0    0      80 10  151  0  1
 2    1450    21750 295  R  15800 236  R     0    0      4900  137  R   7450  32  R   1650  314  R     0    0      80 12  154  0  1
 2    1510    22550 296  R  16200 238  R     0    0      4600  140  R   7900  31  R   2000  315  R     0    0      90 11  165  0  1
 2    1530    22000 298  R  15950 236  R     0    0      4700  129  R   9150  35  R   2500  346  R     0    0       5 24  235  8  1
 2    1550    21500 310  R  11400 240  R     0    0      8100   95  R  14000  41  R   5850   35  R     0    0     325 15  279  0  1
 2    1610    21700 309  R  11800 242  R     0    0      8350   95  R  14350  44  R   5800   35  R     0    0     260 16  345  0  1
 2    1630    21950 308  R  12300 243  R     0    0      8500  100  R  14500  43  R   5600   42  R     0    0     270 14  340  0  1
 2    1650    22300 308  R  12700 242  R     0    0      8850  100  R  14700  45  R   5600   45  R     0    0     240 12  348  0  1
 2    1710    22650 306  R  13150 243  R     0    0      8950  101  R  14950  44  R   5500   45  R     0    0     245 12  346  0  1
 2    1730    23050 306  R  13600 245  R     0    0      9050  103  R  15200  44  R   5350   48  R     0    0     245 12  343  0  1
 2    1750    23500 305  R  14000 245  R     0    0      8950  102  R  15400  44  R   5200   48  R     0    0     240 14  341  0  1
 2    1810    23900 306  R  14450 245  R     0    0      9000  104  R  15700  44  R   5500   50  R     0    0     240 12  342  0  1
 2    1830    24300 306  R  14800 246  R     0    0      9100  105  R  15900  44  R   4900   51  R     0    0     242 14  341  0  1
 2    1850    24650 305  R  15250 249  R     0    0      9150  104  R  16150  42  R   4700   56  R     0    0     240 14  337  0  1
 2    1910    25050 303  R  15900 246  R     0    0      9250  101  R  16250  40  R   4600   60  R     0    0     240 14  334  0  1
 2    1930    26900 301  R      0   0        0    0      6500  117  R  13200  34  R      0    0        0    0       0  0    0  0  2
 2    1950    28150 298  R  20550 249  R     0    0      6250  122  R  12900  34  R      0    0        0    0     210 10   33  7  1
 2    2010    29150 290  R      0   0        0    0      7600  160  R   9250  31  R      0    0        0    0     210  8   30  8  1
 2    2030    30650 281  R      0   0        0    0     11300  180  R   4400  35  R      0    0        0    0     210 10   34  9  1
 2    2050    30000 291  R      0   0        0    0     15150  189  R      0   0  A      0    0        0    0      75 18   50  0  1
 2    2110    33000 280  R      0   0        0    0     12270  190  R      0   0         0    0        0    0      60 16  189  0  1
 2    2130    33750 281  R      0   0        0    0      7350  194  R      0   0         0    0        0    0     255 12    0  3  1
```

```
                                                    (continued)
              124 OBSERVATIONS            EVSAR 2/71        RUN 7

2   2150        0    0         0   0       0  0     0  0     0  0     0  0     0  0      0  0     0  0  2
2   2210        0    0         0   0       0  0     0  0     0  0     0  0     0  0      0  0     0  0  2
2   2230        0    0         0   0       0  0     0  0     0  0     0  0     0  0      0  0     0  0  2
2   2250        0    0         0   0       0  0     0  0     0  0     0  0     0  0      0  0     0  0  2
2   2310        0    0         0   0       0  0     0  0     0  0     0  0     0  0      0  0     0  0  2
2   2330        0    0         0   0       0  0     0  0     0  0     0  0     0  0      0  0     0  0  2
2   2350        0    0         0   0       0  0     0  0     0  0     0  0     0  0      0  0     0  0  2
3     10        0    0         0   0       0  0     0  0     0  0     0  0     0  0      0  0     0  0  2

3     30        0    0         0   0       0  0     0  0     0  0     0  0     0  0      0  0     0  0  2
3     50        0    0         0   0       0  0     0  0     0  0     0  0     0  0      0  0     0  0  2
3    110        0    0         0   0       0  0     0  0     0  0     0  0     0  0      0  0     0  0  2
3    130        0    0         0   0       0  0     0  0     0  0     0  0     0  0      0  0     0  0  2
3    150        0    0         0   0       0  0     0  0     0  0     0  0     0  0      0  0     0  0  2
3    210        0    0         0   0       0  0     0  0     0  0     0  0     0  0      0  0     0  0  2
3    230        0    0         0   0       0  0     0  0     0  0     0  0     0  0      0  0     0  0  2
3    250        0    0         0   0       0  0     0  0     0  0     0  0     0  0      0  0     0  0  2
3    310        0    0         0   0       0  0     0  0     0  0     0  0     0  0      0  0     0  0  2
3    330    20800    0         0   0       0  0     0  0     0  0     0  0     0  0    200 13   343  0  1
3    350    20900    0         0   0       0  0     0  0     0  0     0  0     0  0    240 16   339  0  1
3    410    21050    0         0   0       0  0     0  0     0  0     0  0     0  0    245 16   343  0  1
3    430    21100    0         0   0       0  0     0  0     0  0     0  0     0  0    245 16   345  0  1
3    450    21300    0         0   0       0  0     0  0     0  0     0  0     0  0      0  0     0  0  2
3    510    21100    0         0   0       0  0     0  0     0  0     0  0     0  0      0  0     0  0  2
3    530    21500    0         0   0       0  0     0  0     0  0     0  0     0  0    220 16   344  0  1
3    550    21700    0         0   0       0  0     0  0     0  0     0  0     0  0    231 12   333  0  1
3    610    22050    0         0   0       0  0     0  0     0  0     0  0     0  0    232 12   323  0  1
3    630    22100    0         0   0       0  0     0  0     0  0     0  0     0  0    232 12   323  0  1
3    650    22300    0         0   0       0  0     0  0     0  0     0  0     0  0    232 12   323  0  1
3    710    22850    0         0   0       0  0     0  0     0  0     0  0     0  0    232 12   323  0  1
3    730    23000    0         0   0       0  0     0  0     0  0     0  0     0  0    232 12   323  0  1
3    750    23000    0         0   0       0  0     0  0     0  0     0  0     0  0    230 16   326  0  1
3    810    23550    0         0   0       0  0     0  0     0  0     0  0     0  0    230 16   326  0  1
3    830    23550    0         0   0       0  0     0  0     0  0     0  0     0  0    220 16   320  0  1
3    850    23550    0         0   0       0  0     0  0     0  0     0  0     0  0    240 18   323  0  1
3    910    23550  318 R       0   0       0  0     0  0     0  0     0  0     0  0    240 18   317  0  1
3    930    23650  318 R       0   0       0  0     0  0     0  0     0  0     0  0    240 16   317  0  1
3    950    23875  318 R       0   0       0  0     0  0     0  0     0  0     0  0    240 16   317  0  1
3   1010    24300  318 R       0   0       0  0     0  0     0  0     0  0     0  0    240 16   317  0  1
3   1030    24375  316 R       0   0       0  0     0  0     0  0     0  0     0  0    240 18   317  0  1
3   1050    24550  315 R       0   0       0  0     0  0     0  0     0  0     0  0    245 18   317  0  1
3   1110    24550  314 R       0   0       0  0     0  0     0  0     0  0     0  0    245 21   314  0  1
3   1130    25050  315 R       0   0       0  0     0  0     0  0     0  0     0  0    240 18   314  0  1
3   1150    25000  314 R       0   0       0  0     0  0     0  0     0  0     0  0    240 17   314  0  1
3   1210    25200  313 R       0   0       0  0     0  0     0  0     0  0     0  0    250 17   313  0  1
3   1230    25200  313 R       0   0       0  0     0  0     0  0     0  0     0  0    245 18   314  0  1
3   1250    25200  310 R       0   0       0  0     0  0     0  0     0  0     0  0    245 20   314  0  1
3   1310    25150  309 R       0   0       0  0     0  0     0  0     0  0     0  0    275 16   293  0  1
3   1330        0    0         0   0       0  0     0  0     0  0     0  0     0  0      0  0     0  0  2
3   1350    25850  309 R       0   0       0  0     0  0     0  0     0  0     0  0    270 20   294  0  1
3   1410    25700  307 R       0   0       0  0     0  0     0  0     0  0     0  0    270 18   295  0  1
3   1430    25950  307 R       0   0       0  0     0  0     0  0     0  0     0  0    250 18   315  0  1
3   1450    26300  306 R       0   0       0  0     0  0     0  0     0  0     0  0    280 16   293  0  1
3   1510        0    0         0   0       0  0     0  0     0  0     0  0     0  0      0  0     0  0  2
3   1530        0    0         0   0       0  0     0  0     0  0     0  0     0  0      0  0     0  0  2
3   1550        0    0         0   0       0  0     0  0     0  0     0  0     0  0      0  0     0  0  2
3   1610        0    0         0   0       0  0     0  0     0  0     0  0     0  0      0  0     0  0  2
3   1630        0    0         0   0       0  0     0  0     0  0     0  0     0  0      0  0     0  0  2
3   1650        0    0         0   0       0  0     0  0     0  0     0  0     0  0      0  0     0  0  2
3   1710        0    0         0   0       0  0     0  0     0  0     0  0     0  0      0  0     0  0  2
3   1730 .      0    0         0   0       0  0     0  0     0  0     0  0     0  0      0  0     0  0  2
3   1750        0    0         0   0       0  0     0  0     0  0     0  0     0  0      0  0     0  0  2
3   1810        0    0         0   0       0  0     0  0     0  0     0  0     0  0      0  0     0  0  2
3   1830        0    0         0   0       0  0     0  0     0  0     0  0     0  0      0  0     0  0  2
3   1850        0    0         0   0       0  0     0  0     0  0     0  0     0  0      0  0     0  0  2
3   1910    12800   35 R    3050  33 R     0  0     0  0     0  0     0  0     0  0     10 25   194  0  1
3   1930    16300   32 R    6750  27 R     0  0     0  0     0  0     0  0     0  0     10 26   200  0  1
3   1950    20100   30 R   10700  25 R     0  0     0  0     0  0     0  0     0  0     10 26   208  0  1
```

NOTE1*** THE FIGURES 999 IN THE DROGUE OR DRIFT OBJECT BEARING IS A SPECIAL CODE USED IN SOME CASES DURING DATA PROCESSING TO INDICATE MISSING DATA.

NOTE2*** WIND DATA CODE EXPLAINATION**
0= RELATIVE WIND RECORDED IN DEGREES TRUE
1= RELATIVE WIND RECORDED RELATIVE TO SHIP HEAD
2= QUESTIONABLE WIND DATA
3= NO WIND DATA RECORDED
4= WIND RECORDED IN DEGREES TRUE

ABREVIATIONS

WDC= WIND DATA CODE
CD1= CURRENT DROGUE 1
CD2= CURRENT DROGUE 2
HOW= HOW BEARINGS WERE OBTAINED
R= RADAR
V= VISUAL
A= ALONGSIDE

				H			H	7-MAN		H			H			H			H			H	REL.				W
		REFERENCE		O	CD-1		O	RAFT		O	16FT BOAT		O	18FT BOAT		O	30FT BOAT		O	CD-2		O	WIND		SHIP		D
DAY	TIME(Z)	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	RANGE	BRG	W	DIR	SPD	CRS	SPD	C
3	2010	23400	30	R	14400	25	R	0	0		0	0		0	0		0	0		0	0		10	24	206	6	1
3	2030	27150	29	R	18200	25	R	0	0		0	0		0	0		0	0		0	0		5	26	205	6	1
3	2050	27450	21	R	13050	19	R	0	0		0	0		0	0		0	0		0	0		70	18	110	6	1
3	2110	28375	19	R	13800	14	R	0	0		0	0		0	0		3475	312	R	0	0		255	14	300	0	1
3	2130	27700	12	R	19550	6	R	0	0		0	0	A	0	0		5450	306	R	0	0		70	16	113	6	1
3	2150	28050	10	R	20800	2	R	0	0		0	0	A	0	0		4650	306	R	0	0		237	16	53	5	1
3	2210	23650	14	R	15100	8	R	0	0		4650	165	R	2700	225	R	0	0		0	0		335	25	240	8	1
3	2230	24050	21	R	15600	20	R	0	0		6975	129	R	2775	137	R	0	0		0	0		65	12	131	0	1
3	2250	23700	20	R	15700	19	R	0	0		6625	130	R	2550	136	R	0	0		0	0		90	12	113	0	1
3	2310	23225	17	R	14900	16	R	0	0		6300	128	R	2175	134	R	0	0		0	0		113	10	130	0	1
3	2330	22775	16	R	14625	15	R	0	0		5800	126	R	1950	129	R	2100	275	R	0	0		100	12	125	0	1
3	2350	22350	15	R	14100	14	R	0	0		5550	125	R	0	0		0	0		0	0		85	11	123	0	1
4	10	22475	17	R	14300	17	R	0	0		6300	119	R	2550	99	R	2550	323	R	0	0		305	20	270	5	1
4	30	22575	22	R	14000	24	R	0	0		8150	110	R	4650	100	R	0	0		0	0		240	14	310	0	1
4	50	21800	22	R	13700	26	R	0	0		8500	112	R	5150	102	R	0	0		0	0		95	14	302	0	1
4	110	21500	23	R	13350	27	R	0	0		8650	112	R	5350	102	R	0	0		0	0		245	15	304	0	1
4	130	21000	22	R	12900	27	R	0	0		8950	110	R	5650	98	R	0	0		0	0		180	16	24	0	1
4	150	20300	22	R	12050	30	R	0	0		9450	111	R	6100	103	R	0	0		0	0		245	15	312	0	1
4	210	19700	24	R	11450	33	R	0	0		9950	112	R	6750	103	R	0	0	A	0	0		255	16	309	0	1
4	230	19150	24	R	11050	35	R	0	0		10200	112	R	7000	102	R	0	0	A	0	0		250	15	306	0	1
4	250	18600	25	R	10600	34	R	0	0		10600	111	R	7350	102	R	0	0	A	0	0		255	15	300	0	1
4	310	18050	26	R	9950	38	R	0	0		11000	111	R	7700	106	R	0	0	A	0	0		245	17	301	0	1
4	330	17600	30	R	9500	40	R	0	0		11500	111	R	8150	103	R	0	0	A	0	0		250	16	298	0	1
4	350	17050	27	R	8900	42	R	0	0		11800	112	R	8400	105	R	0	0	A	0	0		260	17	294	0	1
4	410	16500	31	R	9550	43	R	0	0		12300	111	R	8850	104	R	0	0	A	0	0		270	15	290	0	1
4	430	16100	30	R	9700	47	R	0	0		12450	112	R	8950	105	R	0	0	A	0	0		245	16	295	0	1
4	450	15700	29	R	7800	46	R	0	0		12850	111	R	9150	100	R	0	0	A	0	0		245	16	300	0	1
4	510	15100	30	R	7350	49	R	0	0		13000	110	R	9250	102	R	0	0	A	0	0		245	16	302	0	1
4	530	14450	32	R	6800	56	R	0	0		13200	112	R	9600	103	R	0	0	A	0	0		245	16	303	0	1
4	550	14100	32	R	6350	58	R	0	0		13150	111	R	10000	101	R	0	0	A	0	0		245	16	303	0	1
4	610	13900	30	R	6250	56	R	0	0		13700	107	R	10150	97	R	0	0	A	0	0		10	18	120	0	1
4	630	15500	22	R	6900	35	R	0	0		11900	99	R	9300	79	R	0	0	A	0	0		60	18	120	0	1
4	650	15000	20	R	6450	37	R	0	0		11950	99	R	9050	80	R	0	0	A	0	0		240	20	303	0	1
4	710	14500	17	R	6250	32	R	0	0		12200	98	R	9950	78	R	0	0	A	0	0		240	18	303	0	1
4	730	13850	22	R	5850	36	R	0	0		12550	99	R	10000	81	R	0	0	A	0	0		240	20	297	0	1
4	750	12800	24	R	4950	42	R	0	0		12800	97	R	10350	80	R	0	0	A	0	0		240	20	297	0	1
4	810	12500	24	R	4900	45	R	0	0		13000	99	R	10800	80	R	0	0	A	0	0		245	23	290	0	1
4	830	11350	25	R	4450	58	R	0	0		13400	100	R	10850	81	R	0	0	A	0	0		245	23	290	0	1
4	850	10650	28	R	3925	72	R	0	0		13675	103	R	11375	83	R	0	0	A	0	0		250	26	301	0	1
4	910	9900	28	R	3700	83	R	0	0		14125	103	R	11750	85	R	0	0	A	0	0		270	24	285	0	1
4	930	8975	30	R	3650	94	R	0	0		14475	103	R	12150	83	R	0	0	A	0	0		245	18	300	0	1
4	950	8150	17	R	2000	98	R	0	0		12925	101	R	10775	78	R	8150	17	R	0	0		85	17	106	3	1
4	1010	8225	8	R	875	83	R	0	0		12150	97	R	10375	73	R	0	0		0	0		90	15	110	0	1
4	1030	7750	2	R	349	213	V	0	0		11475	95	R	10000	71	R	0	0		0	0		85	25	118	0	1
4	1050	7325	357	R	1400	231	R	0	0		10050	96	R	9900	71	R	0	0		0	0		87	20	121	0	1
4	1110	7000	357	R	2100	235	R	0	0		10050	97	R	9700	71	R	0	0		0	0		90	12	139	0	1
4	1130	6725	343	R	3150	238	R	0	0		9400	95	R	9450	68	R	0	0		0	0		90	20	98	0	1

(continued)

```
4   1150    6700  335 R   3875 240 R    0   0    9600   95 R   9100   66 R    0   0      0   0    90 20  110  0  1
4   1210    6775  328 R   4675 242 R    0   0    7800   92 R   9075   65 R    0   0      0   0    90 18   98  0  1
4   1230    6600  333 R   3800 235 R    0   0    8725   85 R  10575   66 R    0   0      0   0   280 30  292  5  1
4   1250    3900  340 R   4650 197 R    0   0   10650   96 R  12100   77 R    0   0      0   0   290 14  349  3  1
4   1310    4950  298 R   7250 221 R    0   0    7450  102 R   9100   71 R    0   0      0   0    90 16   89  3  1
4   1330    9000  285 R  10750 240 R    0   0    3250  114 R   6000   55 R    0   0      0   0    90 16   90  3  1
4   1350   12150  282 R  12750 246 R    0   0       0    0     6000   37 R    0   0      0   0   315 28  238  6  1
4   1410   10250  293 R   9900 248 R    0   0    4000   52 R   9100   40 R    0   0      0   0   315 34  238  6  1
4   1430    7050  313 R   5550 238 R    0   0    8800   63 R  14050   55 R    0   0      0   0   300 32  262  8  1
4   1450    4450    0 R   3550 171 R    0   0   13800   73 R      0    0      0   0      0   0   270 22  300  8  1
```

APPENDIX 2

A program description with abbreviated documentation and a program listing with typical outputs are found in this appendix. All computations were done using PROGRAM RAFTL.

Name: RAFTL

Programmer: CDR C. W. MORGAN

Originator: CDR C. W. MORGAN

Date: 8 June 1977

Purpose: The function of this program is to aid the oceanographer/engineer in evaluating the quality of leeway angle and leeway factor observations.

Machine: CDC 3300

Source Language: FORTRAN

Description: Leeway is the movement of a drifting object relative to the water. Leeway angle is the angle between wind direction (toward) and leeway direction. Leeway factor is the ratio of leeway speed to wind speed. Program RAFTL exists to compute true wind speed and direction, leeway angle, and leeway factor from sequential observations of time, range and true bearing a current drogue, range and true bearing of a drift object, ships course and speed, and relative wind direction and speed. The program outputs line printer graphs of geographic displacement of the drift object relative to the drogue, leeway angle vs time, leeway factor vs time, leeway angle vs wind speed, and leeway factor vs wind speed.

The program basically proceeds as follows:

1. Read in data for each observation

2. Computes the true wind from the ships course and speed and relative wind direction and speed.

3. Computes the distance between the drogue and drift object using their ranges and bearings.

4. Computes leeway direction and speed from the change in position of the raft relative to the drogue during a 6 hour interval.

5. Computes the average vector wind direction and speed during a 6 hour interval.

6. Computes leeway angle.

7. Prints out and punches cards for:

   a. Time at the beginning of the 6 hour interval

b. Average vector wind direction (toward) and speed (knots) during the interval.

c. Leeway direction and speed (knots) during the interval.

d. Leeway angle (+ to right, - to left) and factor.

8. Prints out individual observation data

a. Observation time

b. X and Y component of true wind

c. X and Y components of distance from drogue to drift object.

d. Drogue range and bearing

e. Drift object range and bearing

f. Relative wind direction (from) and speed

g. Ship heading and speed

9. Computes the counter of the observations on which plotting symbols are to change.

10. Calls plot subroutine for line printer plots.

All calculations are based on elementary kinematics and trigonometry.

USAGE: The program deck is set up as follows:

```
$JOB, 42483,RAFTL-SE,2,2000,500
$SCHED,CORE=40,TIME=1,CLASS=C
$MAP=N
$FTNU(X)


Program          RAFTL
Subroutine       CARTM
Subroutine       CIRCM
Subroutine       PLOTA

   FINIS

$OBJ,LGO
```

Observations in interval card, INTV. (This card gives the number of observational intervals in the 6 hour interval e.g. for 15 minute observations INTV=24, for 20 minute observations INTV=18.)

Data Identifier Card (40 column free (A) format.)

Input Data Cards

Col	Data
3-6	Time (hours and minutes)
16-20	Range to drogue (YARDS)
21-23	Bearing to drogue (°T)
25-29	Range to drift object (YARDS)
30-32	Bearing to drift object (°T)
70-72	Relative wind direction (°R) relative to ships head
73-74	Relative wind speed (knots)
75-77	Ship's head (°T)
78-79	Ship's speed (knots)

9999 card in columns 3-6
Continuation card (in columns 1 and 2; use 01 if more runs follow, use 02 if last run)

Additional sets of Data Identification Card, Input Data Cards, and 9999 card, and Continuation Card as required

88

RESTRICTIONS:

1) RAFTL was designed for an analysis interval of 6 hours.

2) Relative wind must be in degrees relative to ships head. If the relative wind is in °T, then line 26 must be changed to AG = RWD(I).

3) The input format for drift object range and bearing was specifically designed for the data cards for SARR cruises to read the 7 man raft data. Since these cards also contain data on other drift objects the input format can be easily changed to accomodate them.

4) RAFTL was designed to handle range and bearing inputs in yards and °T.

5) There must be exactly INTV observations intervals per 6 hour interval. If wind data is missing it must be estimated or the program invalidly assumes calm conditions.

6) If drogue and/or drift object data is missing insert 999 in the input bearing field of either. This will cause outputs of 99999. in drogue to drift object X coordinate, in leeway direction, leeway speed, leeway angle, and leeway factor. Later, in PLOTA a value of 99999. in either X or Y array will cause that X, Y pair to be skipped in the plotting subroutine.

7) RAFTL is set up to change plotting symbol after every tenth data point.

8) The program is free standing.

Storage requirements: See attached MAP.

Subroutines required: PLOTA
CARTM
CIRCM

Operational Environment:

Device	Function	Special Requirements
Card reader	input	none
Line printer	output	none
Card punch	output	none

Operational characteristics: See Description.

Errors and Diagnostics: None used

References: For more on application of program see report by C. W. Morgan on "Observations of Leeway Angle and Leeway Factor for 7 Man Rafts."

Name: Subroutine CIRCM

Programmer: D. D. Frydenlund, Modified by C. W. Morgan

Originator: D. D. Frydenlund

Date: 8 June 1977

Purpose: To convert from rectangular to geographic polar coordinates

Machine: CDC 3300

Source Language: FORTRAN

Description: This subroutine simply converts from rectangular coordinates (X positive east; U positive north) to geographical polar coordinates (0° - 360°, clockwise, 0° = north).

USAGE: CIRCM (XI, YI, BRGI, DISI)

XI	Rectangular coordinate positive to east
YI	Rectangular coordinate positive to north
BRGI	Geographical polar coordinate for angle
DISI	Geographical polar coordinate for distance

Restrictions: None

Storage Requirements: See Map attached to program RAFTL

Subroutines Required: None

Operational Environment: Not applicable

Operational Characteristics: See Description

Errors and Diagnostics: None

References: None

NAME: Subroutine CARTM

Programmer: D. D. Frydenlund, Modified by C. W. Morgan

Originator: D. D. Frydenlund

Date: 8 June 1977

Purpose: To convert from polar geographic coordinates to rectangular coordinates.

Machine: CDC 3300

Source Language: FORTRAN

Description: This subroutine simply converts from geographical polar coordinate (0° - 360°, clockwise, 0° - north) to rectangular coordinates (X positive east; Y positive north) using elementary trignometry.

USAGE:

CARTM (ANG, DIST, X, Y)

ANG	Geographical polar coordinate for angle
DIST	Geographical polar coordinate for distance
X	Rectangular coordinate positive to east
Y	Rectangular coordinate positive to north

Restrictions: None

Storage Requirements: See Map attached to program RAFTL

Subroutines Required: None

Operational Environment: Not applicable

Operational Characteristics: See Description

Errors and Diagnostics: None

References: None

NAME: Subroutine PLOTA

Programmer: J. H. Discenza, Modified by C. W. Morgan

Originator: J. H. Discenza

Date: 8 June 1977

Purpose: The purpose of this subroutine is to plot an array of X data vs an array of Y data on the line printer.

Machine: CDC 3300

Source Language: FORTRAN

Description: Subroutine PLOTA basically functions as follows:

1) Finds boundary values for the X and Y arrays.

2) If the X and Y scales are to be unequal, they are simply scaled by the numbers of spaces in the X and U plot fields, 100 and 54 respectively

3) If the X and Y scales are to be equal, the appropriate scaling is carried out (lines 33 - 42).

4) X-Axis labeling array is generated.

5) Each of the 55 lines in the interior of the plot is then generated and printed. Before the first line and after the last line, labels and axes are printed. In generating each line of print, all spaces are set blank, then the data points falling within the Y interval of the line are sorted out and the appropriate plotting symbol replaces the blank at each X interval within which an X value falls. Twenty six plot symbols are available. The appropriate plot symbol is assigned during the Y-sort.

USAGE:

PLOTA (XRAY, YRAY, NOPTS, NOPER, IOP)

XRAY	The array of X values
YRAY	The array of Y values
NOPTS	Number of points in X or Y array
NOPER	Array of successive, cumulative, cutoff points in data array after which a character change is desired in the plot. The value of the last NOPER should equal NOPTS
IOP	An option for the equality of the plotting axes. IOP=1 will give a plot in which 1 unit length on the X axis equals 1 unit length on the Y axis. IOP=2 will scale the axes so that the plot fills both axes.

Restrictions: None

Storage Requirements: See Map attached to program RAFTL

Subroutines Required: None

Operational Environment: Not applicable

Operational Characteristics: See Description

Errors and Diagnostics: None

References: None

```
      PROGRAM RAFTL
      COMMON DR(150),DB(150),RR(150),RB(150),RWD(150),RWS(150),SH(150),S
     1S(150),W1(150),W2(150),S1(150),S2(150),TD(150),TS(150),EF(150),EA(
     1150),ANG(150),SPD(150),WD(150),WS(150),RMD(150),RMR(150),
     1MT(150),MI(150),XJT(150),JI(150)
      DIMENSION IT(150),ITD(150),ITS(150),IEA(150),IEF(150)
      READ (60,109) INTV
  109 FORMAT (I2)
      XINTV=INTV
    8 READ(60,100) A,B,C,D,E
  100 FORMAT (5A8)
      M=1
    1 READ (60,101) IT(M),DR(M),DB(M),RR(M),RB(M),RWD(M),RWS(M),SH(M),SS
     1(M)
  101 FORMAT (2X,I4  ,9X,F5.0,F3.0,1X,F5.0,F3.0,37X,2(F3.0,F2.0))
      IF (IT(M).EQ.9999) GO TO 2
      MT(M)=M
      M=M+1
      GO TO 1
    2 M=M-1
      J=M-INTV
      DO 3 I=1,M
      HD=SH(I)
      SV=SS(I)
      RS=RWS(I)
      AG=RWD(I)+SH(I)
      CALL CARTM (AG,RS,RW1,RW2)
      CALL CARTM (HD,SV,B1,B2)
      W1(I)=-RW1+B1
      W2(I)=-RW2+B2
      IF (DB(I).EQ.999.) GO TO 4
      IF (RB(I).EQ.999.) GO TO 4
      BD=DB(I)
      RD=DR(I)
      BR=RB(I)
      RO=RR(I)
      CALL CARTM (BD,RD,D1,D2)
      CALL CARTM (BR,RO,R1,R2)
      S1(I)=R1-D1
      S2(I)=R2-D2
      GO TO 3
    4 S1(I)=99999.
      ANG(I)=99999.
      SPD(I)=99999.
      EA(I) =99999.
      EF(I) =99999.
      GO TO 3
    3 CONTINUE
      DO 5 I=1,J
      IF(S1(I).EQ.99999.) GO TO 9
      K=I+INTV
      IF(S1(K).EQ.99999.) GO TO 9
```

PRECEDING PAGE BLANK

```
      DEL1=S1(K)-S1(I)
      DEL2=S2(K)-S2(I)
      CALL CIRCM (DEL1,DEL2,AA,AS)
      ANG(I)=AA
      SPD(I)=AS/12152.4
      SUM1=(W1(I)+W1(K))/2.
      SUM2=(W2(I)+W2(K))/2.
      II=I+1
      KK=K-1
      DO 6 L=II,KK
      SUM1=SUM1+W1(L)
    6 SUM2=SUM2+W2(L)
      AW1=SUM1/XINTV
      AW2=SUM2/XINTV
      CALL CIRCM (AW1,AW2,DT,ST)
      TD(I)=DT
      TS(I)=ST
      EF(I)=SPD(I)/TS(I)
      EA(I)=ANG(I)-TD(I)
      XJT(I)=I
      GO TO 5
    9 EF(I)=99999.
      EA(I)=99999.
    5 CONTINUE
      WRITE (61,106)
  106 FORMAT (1H1)
      WRITE (61,100) A,B,C,D,E
      WRITE (62,100) A,B,C,D,E
      WRITE (61,102)
  102 FORMAT (1H0, 56H TIME   WIND(TO/KTS)     LEEWAY(TO/KTS)      ANGLE
     1FACTOR)
      WRITE (61,103) (IT(I),TD(I),TS(I),ANG(I),SPD(I),EA(I),EF(I),I=1,J)
      WRITE (62,103) (IT(I),TD(I),TS(I),ANG(I),SPD(I),EA(I),EF(I),I=1,J)
  103 FORMAT (1X,I4,F10.0,F6.1,F12.0,F6.1,F9.1,F9.3)
      DO 7 I=1,M
      X=W1(I)
      Y=W2(I)
      CALL CIRCM (X,Y,DW,SW)
      SX=S1(I)
      SY=S2(I)
    7 CALL CIRCM (SX,SY,DRM,RRM)
      WRITE (61,105)
  105 FORMAT (1H0)
      WRITE (61,104) (IT(I),W1(I),W2(I),S1(I),S2(I),  DR(I),DB(I),RR(I),
     1RB(I),RWD(I),RWS(I),SH(I),SS(I),I=1,M)
  104 FORMAT(1H ,I4,F 6.2,F6.2,F12.0,F8.0,F9.0,F6.0,F9.0,F6.0,F7.0,F5.0,
     1F7.0,F5.0)
      JL=J/10
      JI(1)=10
      DO 13 I=2,JL
   13 JI(I)=JI(I-1)+10
      JI(JL+1)=J
```

```
ANSI FORTRAN(2.3)/MASTER      INTEGER WORD SIZE = 2 , * OPTION IS  OFF , 0 OPTION IS   OFF    06/10/77        PAGE 003
  LN 0105           ML=M/10
  LN 0106           MI(1)=10
  LN 0107           DO 12 I=2,ML
  LN 0108        12 MI(I)=MI(I-1)+10
  LN 0109           MI(ML+1)=M
  LN 0110           NT=1
  LN 0111           CALL PLOTA(S1,S2,M,MI,NT)
  LN 0112           NT=2
  LN 0113           CALL PLOTA(XJT,EA,J,JI,NT)
  LN 0114           CALL PLOTA(XJT,EF,J,JI,NT)
  LN 0115           CALL PLOTA(TS,EA,J,JI,NT)
  LN 0116           CALL PLOTA (TS,EF,J,JI,NT)
  LN 0117           READ (60,107) KODE
  LN 0118       107 FORMAT(I2)
  LN 0119           IF (KODE.EQ.1)GO TO 8
  LN 0120           STOP
  LN 0121           END

      USASI FORTRAN DIAGNOSTIC RESULTS FOR RAFTL

          NO ERRORS
```

```
            M=56-II
      C  NOCURV IN AN INDICATOR AS TO WHICH CHARACTER REPRESENTS ANY SET OF POINTS.
            NOCURV=1
            ID=1H.
            DO 301 N=1,101
      301   KX(N)=1H
            DO 2 I=1,NOPTS
            IF(I.LE.NOPER(NOCURV))GO TO 102
      C     TEN PLOT CHARACTERS ARE PROVIDED WITHIN THIS SUBROUTINE.
            ID = ICHAR(NOCURV)
            NOCURV=NOCURV+1
      C  STARTING WITH MAXY AND GOING DOWN , DATA POINTS ARE SORTED BY Y VALUE AND
      C    PRINTED ON THE LINE-PRINTER.
        102 IF (XRAY(I).EQ.99999.) GO TO 2
            IF (YRAY(I).EQ.99999.) GO TO 2
            K=(YRAY(I)-MINY)/YINCY+1.5
            IF(K.NE.M )GO TO 2
            J=(XRAY(I)-MINX)/XINCX+1.5
            IF(J.LE.0)GO TO 2
            KX(J)=ID
          2 CONTINUE
            IF(II.GT.1)GO TO 63
            WRITE(61,103)
            WRITE(61,23)MINX,(XSTEP(L),L=1,5)
            WRITE(61,22)
            WRITE (61,17) FMAXY,(KX(L),L=1,101)
            GO TO 12
         63 IF (II.NE.MSIX)GO TO 16
            IF (IOP.EQ.1) GO TO 7
            DOG=MAXY-YINCY*(II-1)
            GO TO 8
          7 DOG=FMAXY- YINCY*(II-1)
          8 WRITE(61,17)DOG,(KX (L), L=1,101)
            MSIX=MSIX+6
            GO TO 12
      16     WRITE(61,18)(KX(L),  L=1,101)
        12  CONTINUE
            WRITE (61,22)
            WRITE (61,23)MINX,(XSTEP(I),I=1,5)
            PRINT 62,MINX,MAXX,MINY,MAXY
            RETURN
            END

    USASI FORTRAN DIAGNOSTIC RESULTS FOR PLOTA

        NO ERRORS
```

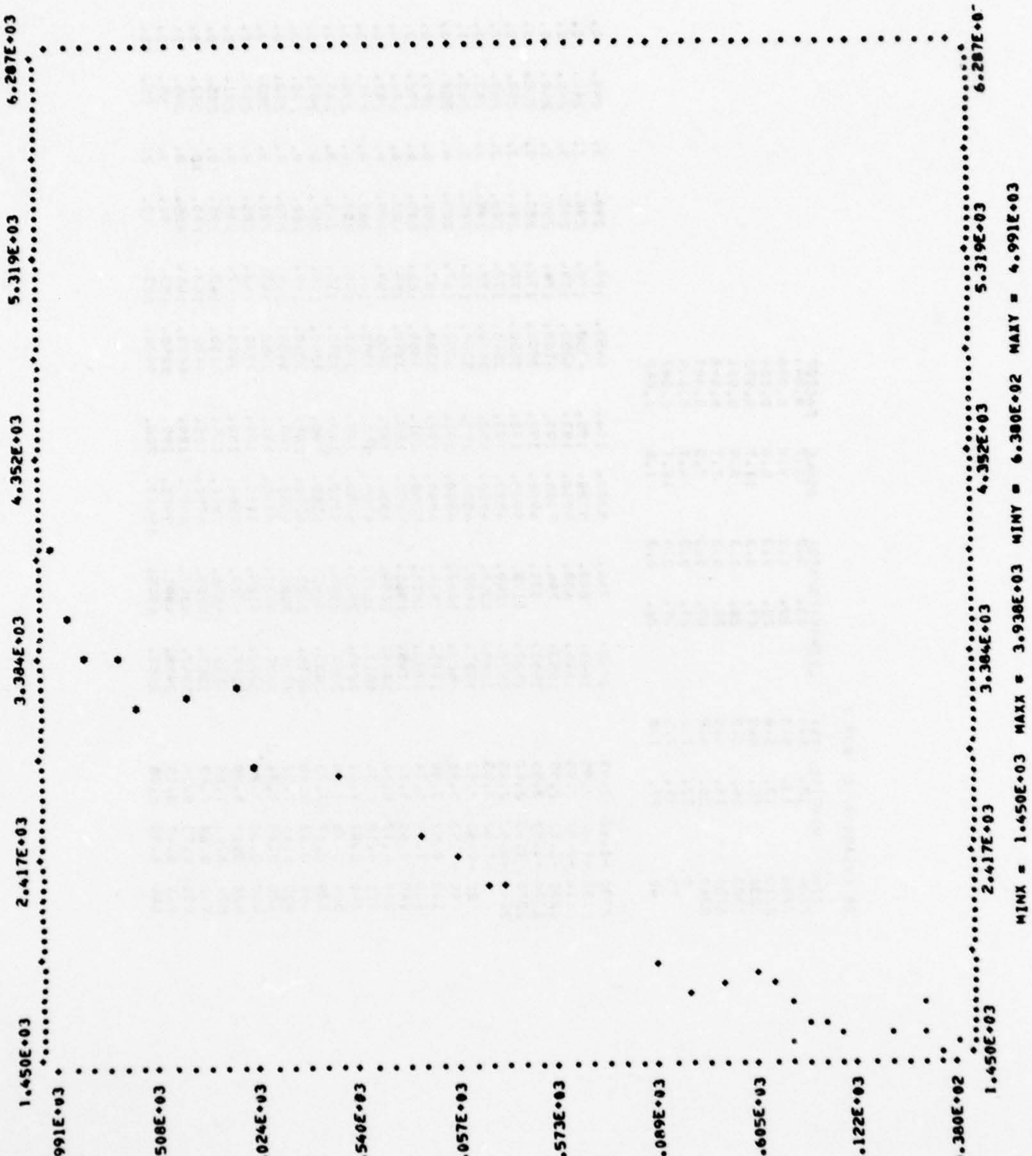
```
ANSI FORTRAN(2,3)/MASTER     INTEGER WORD SIZE = 2 , * OPTION IS  OFF , O OPTION IS   OFF    06/10/77          PAGE 001
              SUBROUTINE PLOTA(XRAY,YRAY,NOPTS,NOPER,IOP)
      C       NOPTS = NUMBER OF POINTS IN YOUR DATA FILE (DIM.OF X OR Y ARRAY)
      C       NOPER = SUCCESIVE, CUMULATIVE, CUTOFF POINTS IN DATA ARRAY AFTER
      C       WHICH A CHARACTER CHANGE IS DESIRED ( TO DISTINGUISH CURVES ETC.).
      C NOTE, THE VALUE OF YOUR LAST NOPER TERM SHOULD ALWAYS BE EQUAL TO NOPTS.
              DIMENSION XRAY(1150),YRAY(1150)
              DIMENSION                   KX(101),XSTEP(5),NOPER(10),ICHAR(9)
              REAL MAXX,MAXY,MINX,MINY
              DATA ICHAR/1H+,1H*,1H.,1H=,1H-,1H>,1HO,1HV,1HA/
      17      FORMAT(1X,1PE10.3,2H +,101A1,1H+)
      18      FORMAT(12X,1H.,101A1,1H.)
      22      FORMAT(1H ,12X,1H+,10(10H.........+))
      62      FORMAT(/,26X,7HMINX = ,1PE10.3,2X,7HMAXX = ,1PE10.3,2X,7HMINY = ,1
             2PE10.3,2X,7HMAXY = ,1PE10.3)
      103      FORMAT(1H1)
              MSIX=7
              MINX=XRAY(1)
              MAXX=XRAY(1)
              MINY=YRAY(1)
      23      FORMAT(1H ,7X,1PE10.3,6(10X,1PE10.3))
              MAXY=YRAY(1)
              DO 1 I=1,NOPTS
      C  FIND BOUNDARY VALUES FOR THE DATA.
              IF (XRAY(I).EQ.99999.) GO TO 1
              IF (YRAY(I).EQ.99999.) GO TO 1
              IF(MAXY.LT.YRAY(I))MAXY=YRAY(I)
              IF(MAXX.LT.XRAY(I))MAXX=XRAY(I)
              IF(MINX.GT.XRAY(I))MINX=XRAY(I)
              IF(MINY.GT.YRAY(I))MINY=YRAY(I)
            1 CONTINUE
      C  THIS IS A 100*54 GRAPH.  XINCX AND YINCY WILL BE SCALE FACTORS.
              IF (IOP.EQ.2) GO TO 6
              A=MAXX-MINX
              B=MAXY-MINY
              BM=0.9*B
              IF(A.GE.BM) GO TO 3
              W=R*1./.9
              GO TO 4
            3 W=A
            4 XINCX=W/100.
              YINCY=0.9*W/54.
              FMAXY=MINY+0.9*W
              GO TO 5
            6 XINCX=(MAXX-MINX)/100.
              YINCY=(MAXY-MINY)/54.
              FMAXY=MAXY
            5 XSTEPP=XINCX*20.
      C  XSTEP REPRESENTS THE LABELING ARRAY FOR THE X AXIS.
              XSTEP(1)=XSTEPP+MINX
              DO 51 I=2,5
      51       XSTEP(I)=XSTEP(I-1)+XSTEPP
              DO 12 II=1,55
```

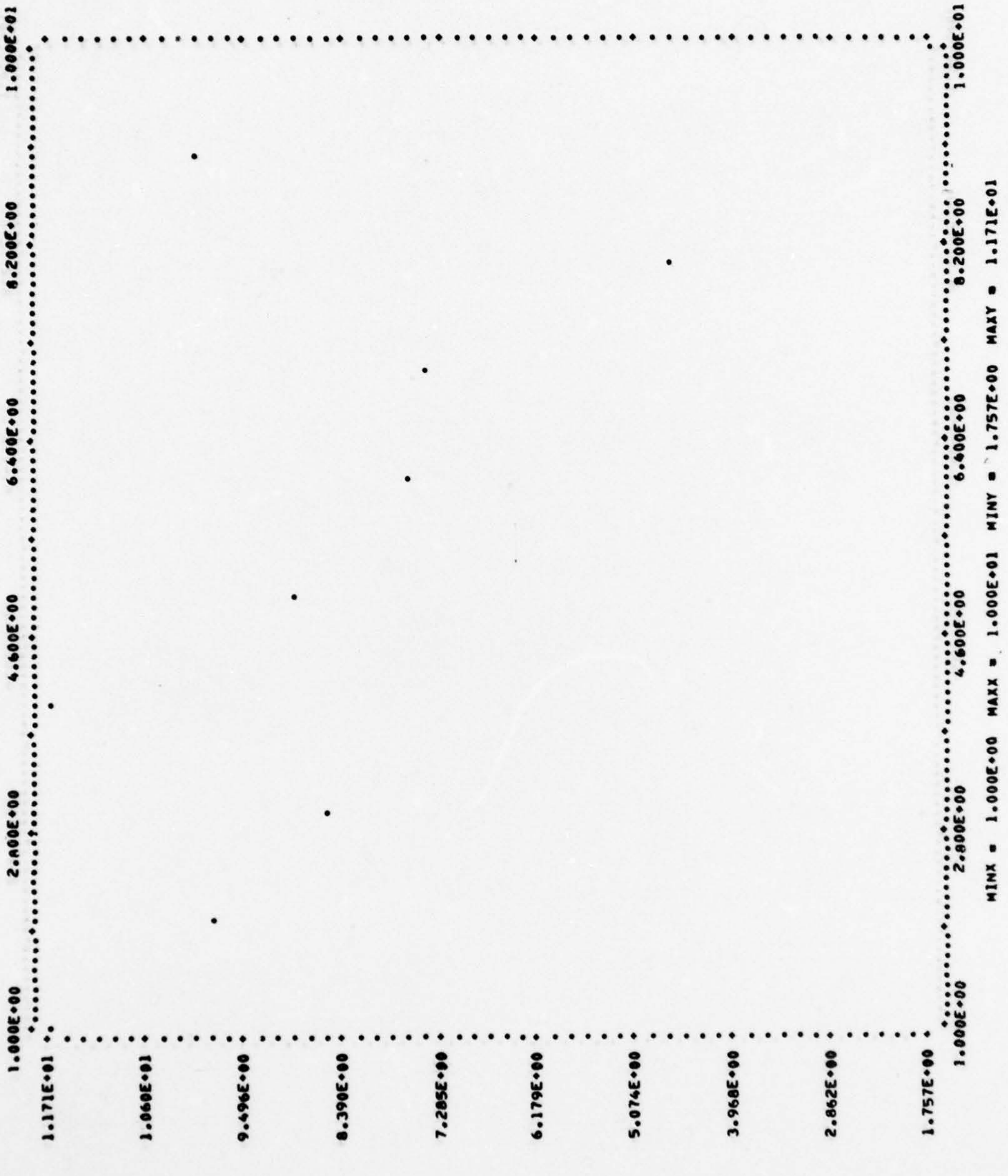
```
ANSI FORTRAN(2,3)/MASTER      INTEGER WORD SIZE = 2 , * OPTION IS  OFF , O OPTION IS   OFF    06/10/77         PAGE 001

  LN 0001              SUBROUTINE CIRCM (XI,YI,BRGI,DISI)
  LN 0002              DISI=((XI*XI)+(YI*YI))**0.5
  LN 0003              IF(YI.EQ.0.) GO TO 5
  LN 0004              ANG=ATAN(ABS(XI)/ABS(YI))*57.2958
  LN 0005            5 CONTINUE
  LN 0006              IF(XI)10,20,30
  LN 0007           10 IF(YI)12,14,16
  LN 0008           12 BRGI=180.+ANG
  LN 0009              GO TO 40
  LN 0010           14 BRGI=270.
  LN 0011              GO TO 40
  LN 0012           16 BRGI=360.-ANG
  LN 0013              GO TO 40
  LN 0014           20 IF(YI.GE.0.) GO TO 25
  LN 0015              BRGI=180.
  LN 0016              GO TO 40
  LN 0017           25 BRGI=0.
  LN 0018              GO TO 40
  LN 0019           30 IF(YI)32,34,36
  LN 0020           32 BRGI=180.-ANG
  LN 0021              GO TO 40
  LN 0022           34 BRGI=090.
  LN 0023              GO TO 40
  LN 0024           36 BRGI=ANG
  LN 0025           40 CONTINUE
  LN 0026              RETURN
  LN 0027              END

        USASI FORTRAN DIAGNOSTIC RESULTS FOR CIRCM

             NO ERRORS
```

```
ANSI FORTRAN(2.3)/MASTER     INTEGER WORD SIZE = 2 , * OPTION IS  OFF , 0 OPTION IS   OFF    06/10/77         PAGE 001
   LN 0001     C      SUBROUTINE CARTM CONVERTS POLAR(GEO) TO RECTANGULAR CO-ORDS.
   LN 0002            SUBROUTINE CARTM ( ANG.DIST.X.Y)
   LN 0003            IF(ANG.GT.90.) GO TO 10
   LN 0004            X=DIST*SIN(ANG/57.2958)
   LN 0005            Y=DIST*COS(ANG/57.2958)
   LN 0006            GO TO 40
   LN 0007         10 IF(ANG.GT.180.) GO TO 20
   LN 0008            ANK=ANG-90.
   LN 0009            X=DIST*COS(ANK/57.2958)
   LN 0010            Y=-DIST*SIN(ANK/57.2958)
   LN 0011            GO TO 40
   LN 0012         20 IF(ANG.GT.270.) GO TO 30
   LN 0013            ANK=ANG-180.
   LN 0014            X=-DIST*SIN(ANK/57.2958)
   LN 0015            Y=-DIST*COS(ANK/57.2958)
   LN 0016            GO TO 40
   LN 0017         30 CONTINUE
   LN 0018            ANK=ANG-270.
   LN 0019            X=-DIST*COS(ANK/57.2958)
   LN 0020            Y=DIST*SIN(ANK/57.2958)
   LN 0021         40 CONTINUE
   LN 0022            RETURN
   LN 0023            END

      USASI FORTRAN DIAGNOSTIC RESULTS FOR CARTM

           NO ERRORS
OBJ.LGO
```

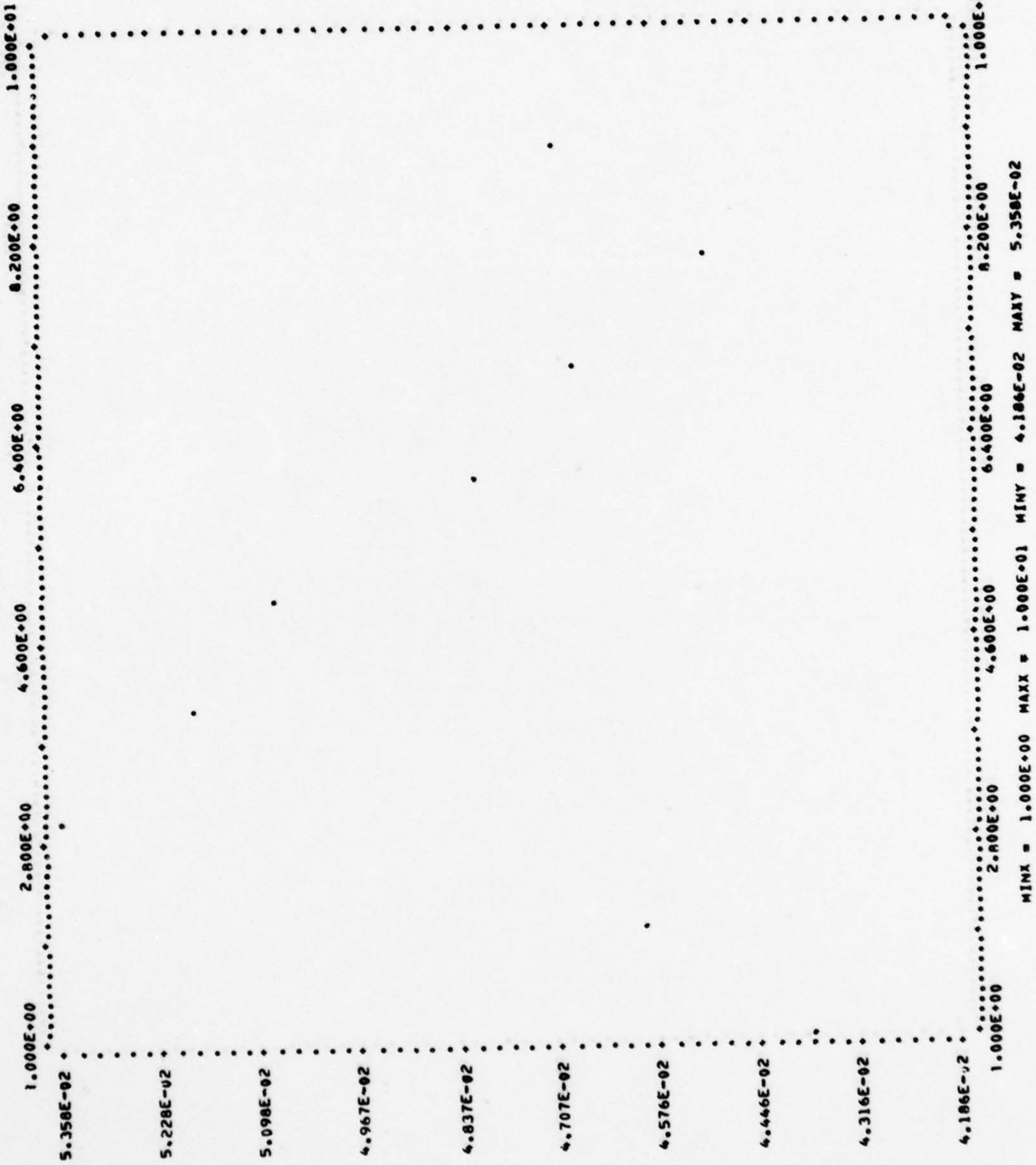
```
SUBP      DATE       06/10/77       TIME       10/23/59
    50274    BLDBIV40     50343    UFUTIL       50700    Q.KONVIR     50721    Q.KONVRI     51033    Q.ADDD       52211    UFSINCOS
    52547    UFEXP        52731    UFALOG       53140    Q.EXRR       53230    UFATAN       53505    Q.STOP       53607    UFSELECT
    54067    Q.ERROR      54247    UFIO         57204    UFIOUTIL     61035    Q.DOUT       62000    UFBCDOUT     63543    UFBCDIN
    65412    CARTM        65631    CIRCM        66033    PLOTA        67434    RAFTL

COMM CM1
    17170    1

COMM CM2
    NONE

DATA CM1
    NONE

DATA CM2
    NONE

ENTR
    53122    ALOG         53310    ATAN         53326    ATAN2        56370    BCDDSI.      50274    BLDBIV40     54033    CANARPLT
    54025    CANDVFLT     54030    CANEXPOV     65412    CARTM        65631    CIRCM        52477    COS          62744    DE.EXP
    62670    DE.OUT       57461    ERR.1        57514    ERR.15       57463    ERR.2        57465    ERR.4        57472    ERR.5
    52712    EXP          52712    EXP.         54007    EXPFLAG      62676    EXPOUT.      52622    EXP2         63345    FRSTCHR.
    63423    GETSIGN.     53670    IARFLT       53775    IDVCHK       53732    IEXFLT       56274    IFEOF        56254    IFPAR
    65346    INPABT       63303    INTZERO.     63344    LASTCHR.     53006    LOG2         56371    MODE.        65351    NOINPABT
    63511    NOOUTABT     63516    NUMBER.0     63520    NUMBER.2     60370    NUMIOERR     63506    OUTABT       51105    P.ADDD
    51777    P.DVDD       53140    P.EXRR       51606    P.MUDD       66401    PLOTA        54574    POINTDSI     51105    Q.ADDD
    50446    Q.ADDRES     53122    Q.ALOG       50351    Q.ARGADR     52175    Q.ARGMAD     50350    Q.ARGMNT     50344    Q.ARGMN2
    53637    Q.ARITH      53310    Q.ATAN       53326    Q.ATAN2      50374    Q.BARGAD     50375    Q.BARGMN     50367    Q.BARGM2
    57155    Q.BCDDSI     63620    Q.BCDISP     62061    Q.BCDOSP     50366    Q.BC2ADD     56010    Q.BKSP       57151    Q.BUFEND
    56711    Q.BUFFER     60732    Q.BUFPNT     56376    Q.BUFSWX     55460    Q.CALADR     54656    Q.CKEOF      51512    Q.COMP
    55232    Q.CONDSI     52477    Q.COS        50352    Q.C2DATA     57235    Q.DBSHFT     60736    Q.DCINST     53743    Q.DIVD
    52005    Q.DIVIDD     51113    Q.DOUBAD     61035    Q.DOUT       57156    Q.DSI        54310    Q.DSICK      51777    Q.DVDD
    57355    Q.DWIDTH     63676    Q.EBCIN      62140    Q.EBCOT      54641    Q.EOACON     56106    Q.EOF        55271    Q.EOR
    54067    Q.ERROR      53701    Q.EXP        54007    Q.EXPFLG     52622    Q.EXP2       53140    Q.EXRR       57710    Q.FINIT
    57353    Q.FORADR     57767    Q.FSCAN      57760    Q.FTERM      57152    Q.FWA        57204    Q.WARRAY     56374    Q.WRDTYP
    63544    Q.IBCIN      62002    Q.IBCOT      57161    Q.IBFLEN     63706    Q.IDEC       62166    Q.IENC       63625    Q.INBCD1
    63632    Q.INBCD2     63637    Q.INBCD4     50554    Q.INCMP2     50347    Q.INDEX1     72452    Q.INTSIZ     60405    Q.IOABRT
    50721    Q.KONVDI     50700    Q.KONVIR     50727    Q.KONVRI     53006    Q.LOG2       57157    Q.MODE       51606    Q.MUDD
    51614    Q.MULTDD     62351    Q.NHOT       55272    Q.NOP        72453    Q.NUSASI     62335    Q.NMOT       57161    Q.OBFLEN
    54036    Q.OCTRCD     62066    Q.OTBCD1     62073    Q.OTBCD2     62100    Q.OTBCD4     50632    Q.OTCMP2     53513    Q.PAUSE
    57160    Q.PNTR       55745    Q.REWND      57153    Q.RTNAME     50345    Q.SAVAQ      57356    Q.SCALE      50376    Q.SET
    50447    Q.SETTO      52211    Q.SIN        63554    Q.SINP       62021    Q.SOUT       62012    Q.SPUN       56372    Q.STATUS
    53505    Q.STOP       63457    Q.STORE      56375    Q.SWTCMX     57357    Q.TYPE       57354    Q.WIDTH      53702    Q.XABORT
    56010    09QBKSP      56106    09QEOF       55745    09QREWND     53622    09QSLECT     72454    RAFTL        54021    SELARPLT
    54011    SELDVFLT     54015    SELEXPOV     50356    SIMACC.0     50357    SIMACC.1     50360    SIMACC.2     50361    SIMACC.3
    52211    SIN          63462    STR.XIT      63466    TRNSFER.     72370    UIC          53702    XABORT       63302    ZEROCNT.
```

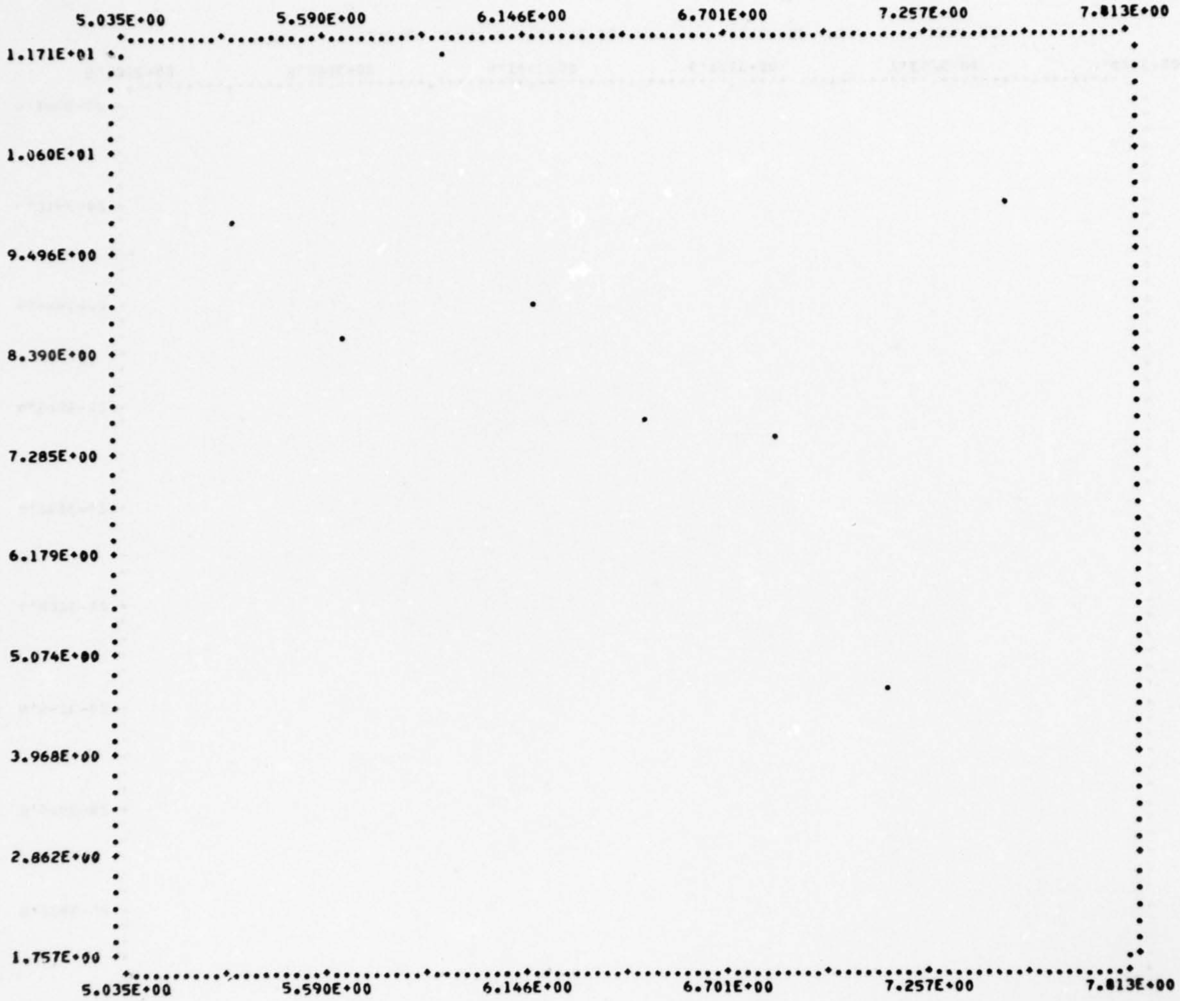
```
28 EVSARR 9/70  RUN 7

 TIME   WIND(TO/KTS)       LEEWAY(TO/KTS)      ANGLE  FACTOR
2130         12.    5.0              23.   0.2      11.7   0.044
2150         13.    5.3              22.   0.2       9.8   0.046
2210         13.    5.6              22.   0.3       8.6   0.054
2230         15.    5.9              27.   0.3      11.7   0.052
2300         16.    6.2              25.   0.3       8.9   0.051
2320         18.    6.5              25.   0.3       7.7   0.048
2340         20.    6.8              27.   0.3       7.5   0.047
   0         22.    7.1              27.   0.3       4.7   0.045
  20         24.    7.5              35.   0.4      10.1   0.047
  40         27.    7.8              28.   0.3       1.8   0.042

2130 -0.52  2.95       1450.    744.    5350.  194.    4450.  178.   290.   3.   240.   0.
2150 -0.52  2.95       1688.    828.    5350.  195.    4350.  176.   290.   3.   240.   0.
2210 -0.52  2.95       1495.    638.    5000.  193.    4250.  175.   290.   3.   240.   0.
2230 -0.52  2.95       1553.    794.    5000.  193.    4100.  174.   290.   3.   240.   0.
2300 -0.52  2.95       1562.    931.    4900.  192.    3900.  172.   280.   3.   250.   0.
2320  1.63  2.82       1527.   1178.    4900.  192.    3650.  172.   280.   3.   280.   0.
2340 -0.52  2.95       1578.   1260.    4850.  193.    3500.  172.   285.   3.   245.   0.
   0 -0.62  2.93       1582.   1358.    4900.  193.    3450.  172.   285.   3.   243.   0.
  20 -0.62  2.93       1507.   1462.    4850.  191.    3350.  170.   285.   3.   243.   0.
  40 -0.52  5.98       1669.   1448.    4800.  191.    3350.  167.   285.   6.   250.   0.
 100  0.52  5.98       1772.   1529.    4900.  192.    3350.  167.   285.   6.   260.   0.
 120  1.75  5.74       1793.   1805.    5150.  191.    3350.  166.   285.   6.   272.   0.
 140  1.65  5.77       1745.   1965.    5250.  189.    3350.  164.   280.   6.   276.   0.
 200  4.12  6.86       1888.   2089.    5350.  187.    3450.  159.   290.   8.   281.   0.
 220  4.12  6.86       1817.   1571.    4750.  189.    3300.  161.   280.   8.   291.   0.
 240  2.47  7.61       2293.   2816.    5950.  189.    3350.  156.   280.   8.   278.   0.
 300  3.76  7.06       2251.   2905.    6000.  188.    3350.  155.   285.   8.   283.   0.
 320  2.07  7.73       2433.   3062.    6100.  190.    3250.  155.   290.   8.   265.   0.
 340  3.08  8.46       2516.   3205.    6050.  188.    3250.  149.   280.   9.   280.   0.
 400  1.11  7.92       2826.   3586.    6550.  189.    3400.  148.   270.   8.   278.   0.
 420  3.13  7.36       2875.   4039.    6850.  188.    3350.  145.   280.   8.   283.   0.
 440  3.38  7.25       3222.   4125.    7150.  188.    3700.  143.   285.   8.   280.   0.
 500  3.07  6.29       3185.   4386.    7500.  186.    3900.  142.   285.   7.   281.   0.
 520  6.43  7.66       3156.   4596.    7900.  185.    4100.  143.   295.  10.   285.   0.
 540  6.69  7.43       3367.   4705.    8250.  185.    4400.  143.   280.  10.   302.   0.
 600  6.13  5.14       3367.   4847.    8800.  184.    4800.  145.   285.   8.   305.   0.
 620  6.47  8.19       3938.   4991.    9900.  190.    5250.  155.    90.   3.    55.  10.
 640  6.55  6.88       3557.   4945.   15400.  208.    9400.  203.    70.   2.    55.  10.
```


1.450E+03
2.417E+03
3.384E+03
4.352E+03
5.319E+03
6.287E+03
4.991E+03
4.508E+03
4.024E+03
3.540E+03
3.057E+03
2.573E+03
2.089E+03
1.605E+03
1.122E+03
6.380E+02
MINX = 1.450E+03 MAXX = 3.938E+03 MINY = 6.380E+02 MAXY = 4.991E+03



MINX = 1.000E+00 MAXX = 1.000E+01 MINY = 1.757E+00 MAXY = 1.171E+01


1.000E+00
2.800E+00
4.600E+00
6.400E+00
8.200E+00
1.000E+01
5.358E-02
5.228E-02
5.098E-02
4.967E-02
4.837E-02
4.707E-02
4.576E-02
4.446E-02
4.316E-02
4.186E-02
MINX = 1.000E+00 MAXX = 1.000E+01 MINY = 4.186E-02 MAXY = 5.358E-02



```
MINX =  5.035E+00  MAXX =  7.813E+00  MINY =  1.757E+00  MAXY =  1.171E+01
```

AD-A055 321 COAST GUARD WASHINGTON D C OCEANOGRAPHIC UNIT F/G 13/10
EXPERIMENTS IN SMALL CRAFT LEEWAY.(U)
1978 C W MORGAN, S E BROWN, R C MURRELL
UNCLASSIFIED CGOV-TR-77-2 NL

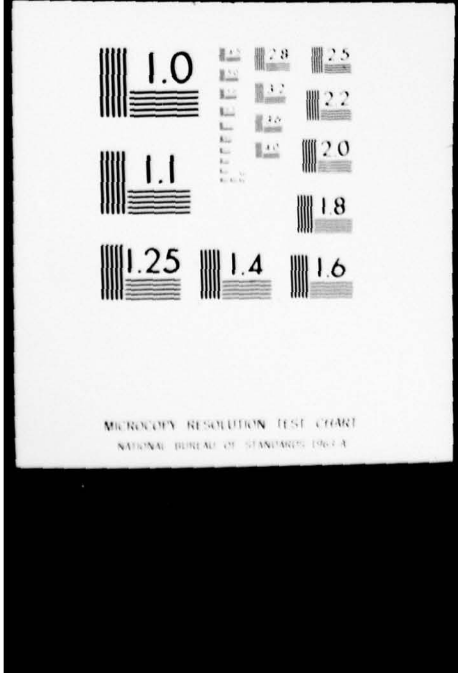
2 OF 2
AD
A055 321

END
DATE
FILMED
8-78
DDC

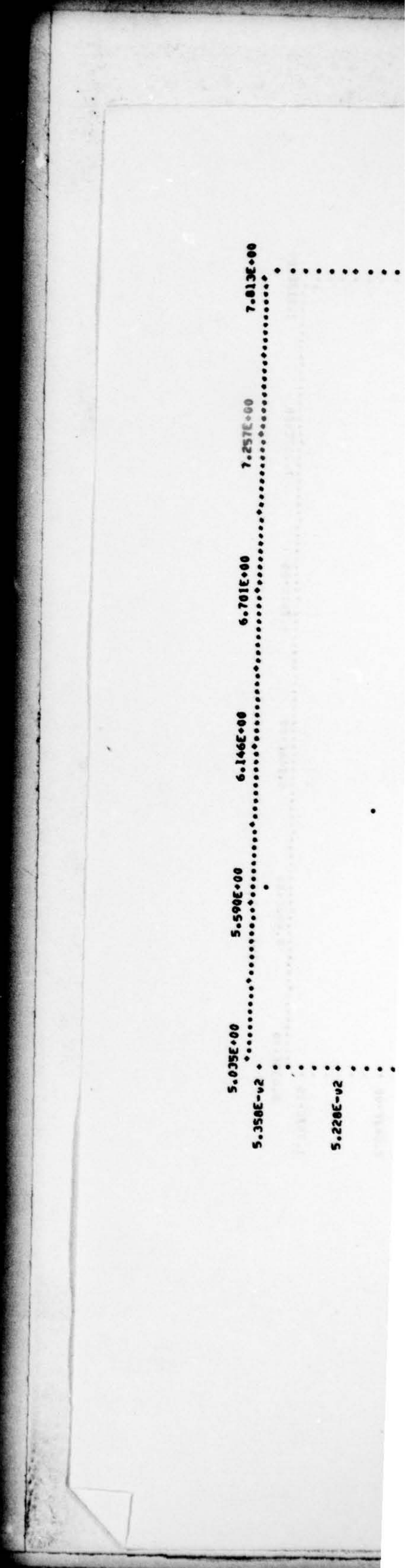
SSIFIE

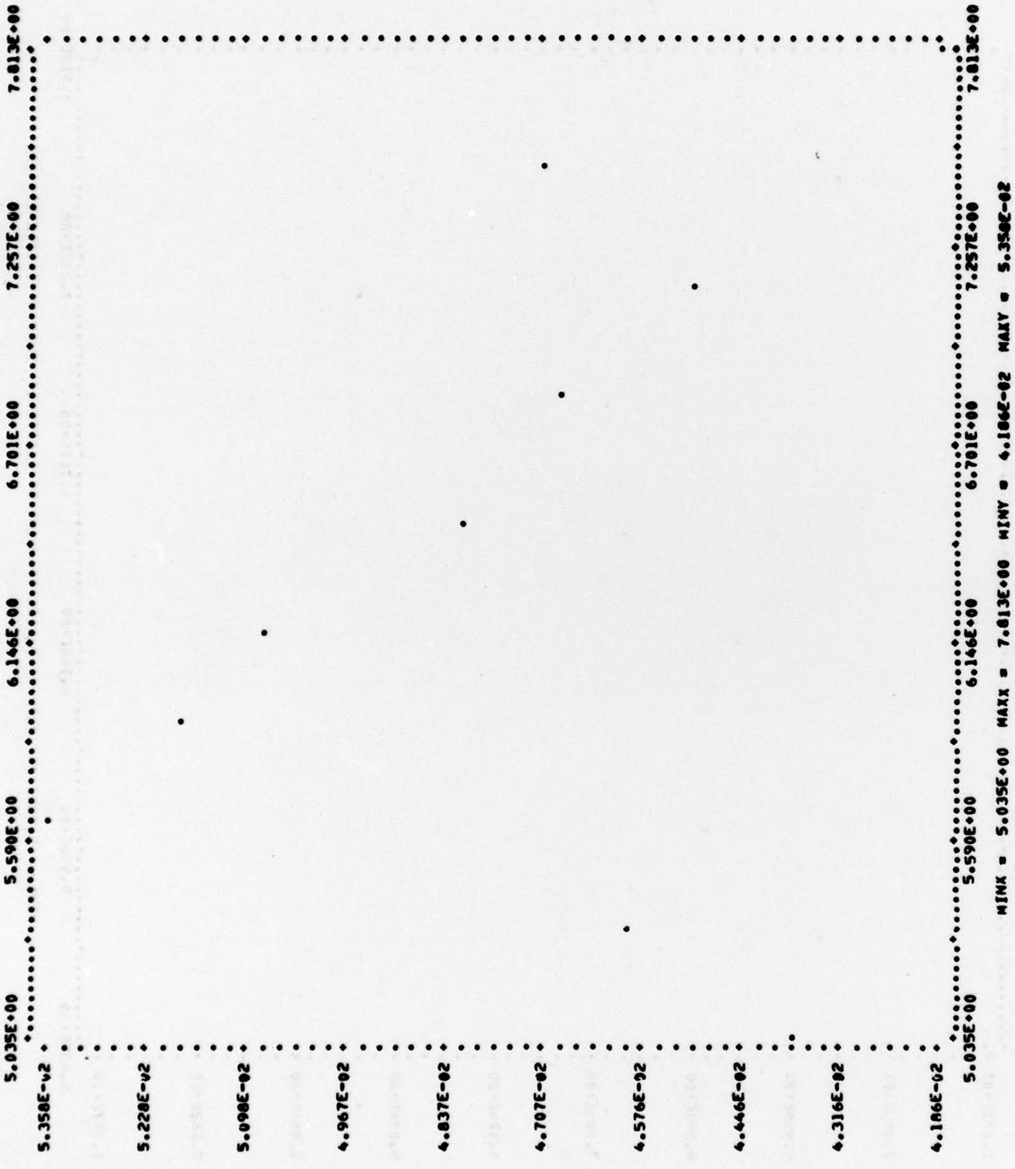
2 OF 2

D
055 321


1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963 A





☆U.S. GOVERNMENT PRINTING OFFICE: 1978-261-264/65